HCD-MD1

SERVICE MANUAL

Canadian Model
AEP Model
Singapore Model

HCD-MD1 is the Tuner, Amplifier,
Compact disc section in DHC-MD1.

CD SECTION	Model Name Using Similer Mechanism	NEW
	CD Mechanism Type	CDM13BC-5BD16
	Base Unit Type	BU-5BD16
	Optical Pick-up Type	KSS-390A

SPECIFICATIONS

CD player section

System: Compact disc digital audio system
Laser: Semiconductor laser
Wavelength: 780 – 790 nm
Frequence response: 2 Hz – 20 kHz (±0.5 dB)
Signal-to-noise ratio: More than 90 dB
Outputs
DIGITAL OUT
(Square optical connector jack, rear panel):
wave length 660 nm

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range: 87.5 – 108.0 MHz
Antenna terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
European models (except Germany and Italy):
MW: 531 – 1,602 kHz
LW: 153 – 279 kHz
German model:
AM: 531 – 1,602 kHz
Italian model:
AM: 522 – 1,611 kHz
Canadian and Singapore model :
AM: 530 – 1,710 kHz
(with the AM tuning interval set at 10 kHz)
531 – 1,602 kHz
(with the AM tuning interval set at 9 kHz)
Singapore model :
SW : 5.95 – 17.90 MHz
Antenna: AM loop antenna
External antenna terminals
Intermediate frequency: 450 kHz

Amplifier section

European models, Singapore model:
Continuous RMS power output:
25 + 25 watts (6 ohms, at 1 kHz, DIN)
30 + 30 watts (6 ohms, at 1 kHz, 5% THD)
Music power output:
45 + 45 watts (6 ohms, at 1 kHz, 10% THD)
Canadian model :
Continuous RMS power output:
22 + 22 watts (6 ohms, at 40 – 20,000 Hz, 0.9% THD)
30 + 30 watts (6 ohms, at 1 kHz, 5% THD)

Inputs
MIC (mini jack):
Sensitivity 1 mV, impedance 600 ohms
European models:
PHONO (phono jack):
Sensitivity 3 mV, impedance 47 kilohms
AUX (phono jacks):
Sensitivity 450 mV, impedance 47 kilohms
Canadian model, Singapore model:
AUX 1 (phono jack):
Sensitivity 450 mV, impedance 47 kilohms
AUX 2 (phono jacks):
Sensitivity 450 mV, impedance 47 kilohms
Outputs
LINE OUT (phono jacks):
Output level 250 mV (at 47 kilohms)
Load impedance over 10 kilohms
HEADPHONES (stereo mini jack):
accepts headphones of 8 ohms or more.
SPEAKER:
accepts speakers of 6 to 16 ohms.

General

Destination	Power requirements	Power consumption
Europe	220 – 230 V AC, 50/60 Hz	70 W
Canada	120 V AC, 60 Hz	70 W
Singapore	110 – 120 V, 220 – 240 V AC 50/60 Hz	70 W

Dimensions: Approx. 225 x 135 x 305 mm (w/h/d)
(8 7/8 x 5 3/8 x 12 1/8 inches)
Mass: Approx. 4.8 kg (10 lb 9 oz)

U.S. and foreign patents licensed from Dolby Laboratories Licensing Corporation.

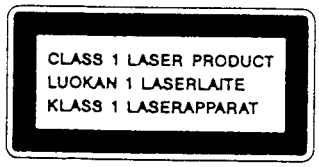
Design and specifications subject to change without notice.

MICROFILM

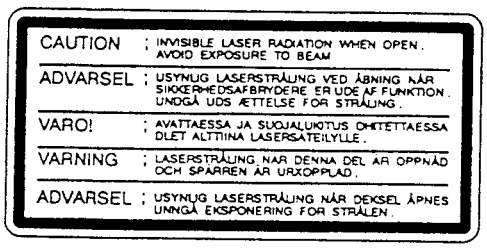
COMPACT DISC RECEVIER

SONY®

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM
ADVARSEL ; USYNUG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLNING NÄR DENNA DEL ÄR OPPNAD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Fiexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

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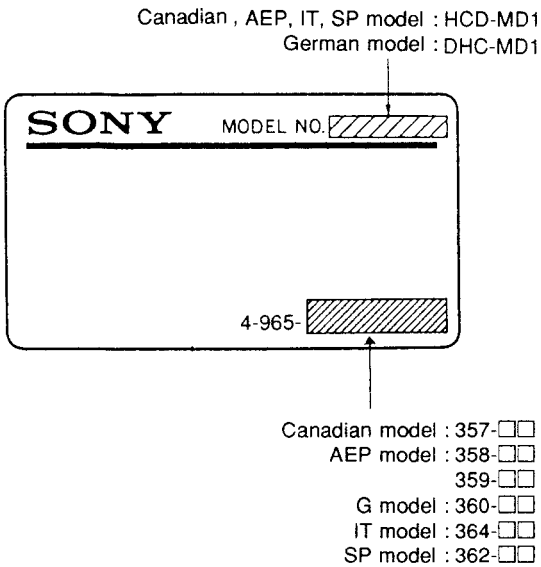
SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MODEL IDENTIFICATION
— SPECIFICATION LABEL —



Note
G : German model
IT : Italian model
SP : Singapore model

SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repain parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

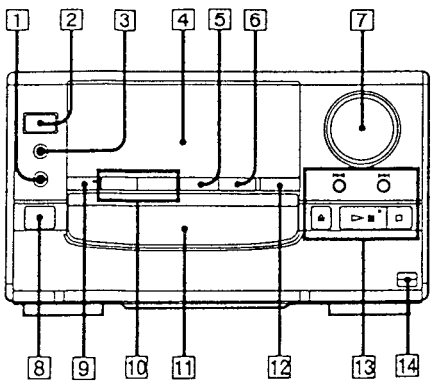
LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output three times.

SECTION 2
GENERAL

This section is extracted from instruction manual.

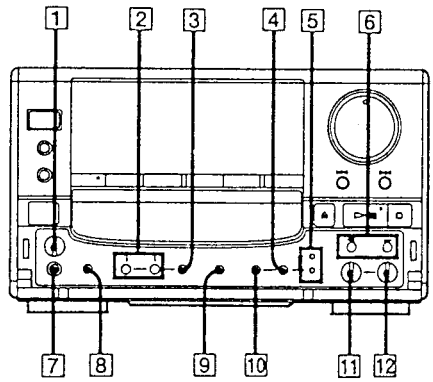
Front Panel



1 HEADPHONES jack (stereo minijack) (22, 26)
2 SYSTEM POWER switch (8)
3 Remote sensor
4 Display window (8)
5 EFFECT button (22)
6 EQ PRESET button (22)
7 VOLUME control (8, 22)
8 FUNCTION button (24)
9 BAND button (11)
10 –/+ buttons (11)
11 Disc tray
12 P.MODE (play mode) button (9)
13 CD player operating buttons
⏏ (open/close of the disc tray) (8)
▷II (play/pause)
□ (stop)
⏮ ⏭ (AMS)*
14 Cover open/close button

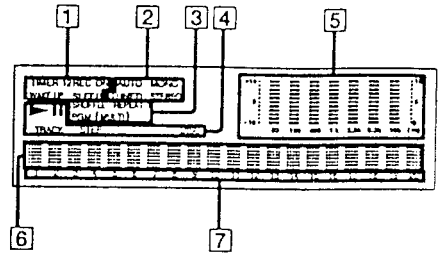
*AMS: Automatic Music Sensor

(Inside the cover)



1 MIC LEVEL control (24)
2 CLOCK SET buttons (6)
TIMER 1 button
TIMER 2 button
3 TIMER REC button (24)
4 TUNING MODE button (11)
5 TUNING/PRESET indicators (11)
6 ◀◀ ▶▶ (manual search) buttons (8)
7 MIC jack (24, 25)
8 KARAOKE PON button (25)
9 MEMORY/NEXT button (12, 23, 24)
10 STEREO/MONO button (11)
11 FREQUENCY control (22)
12 LEVEL control (22)

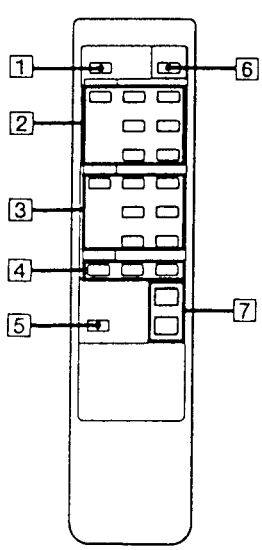
Display Window



1 Timer indication (23, 24)
2 Tuner indication (11)
3 CD play mode indication (9, 10)
4 CD play status indication (8)
5 Spectrum analyzer (8, 11, 22)
6 Timer/time/function/tuner/CD indications (6, 8, 11, 23)
7 Music calendar (8)

Remote commander

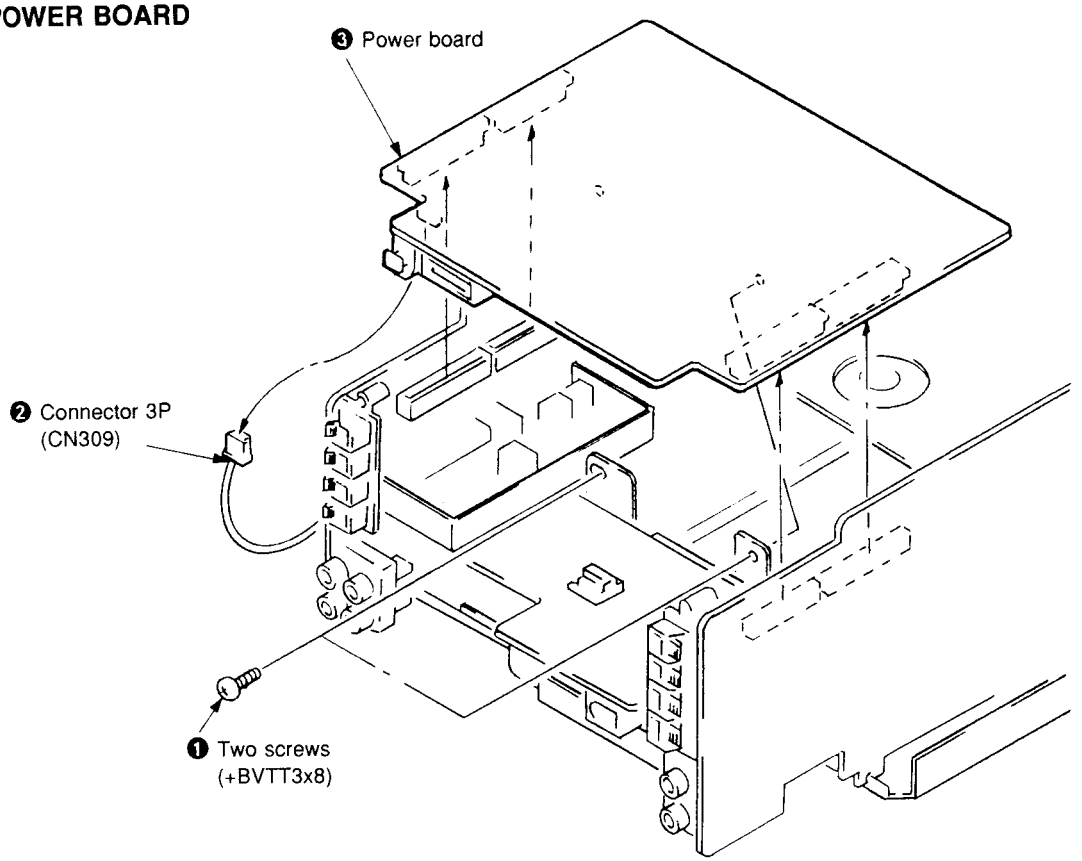
RM-S11MD



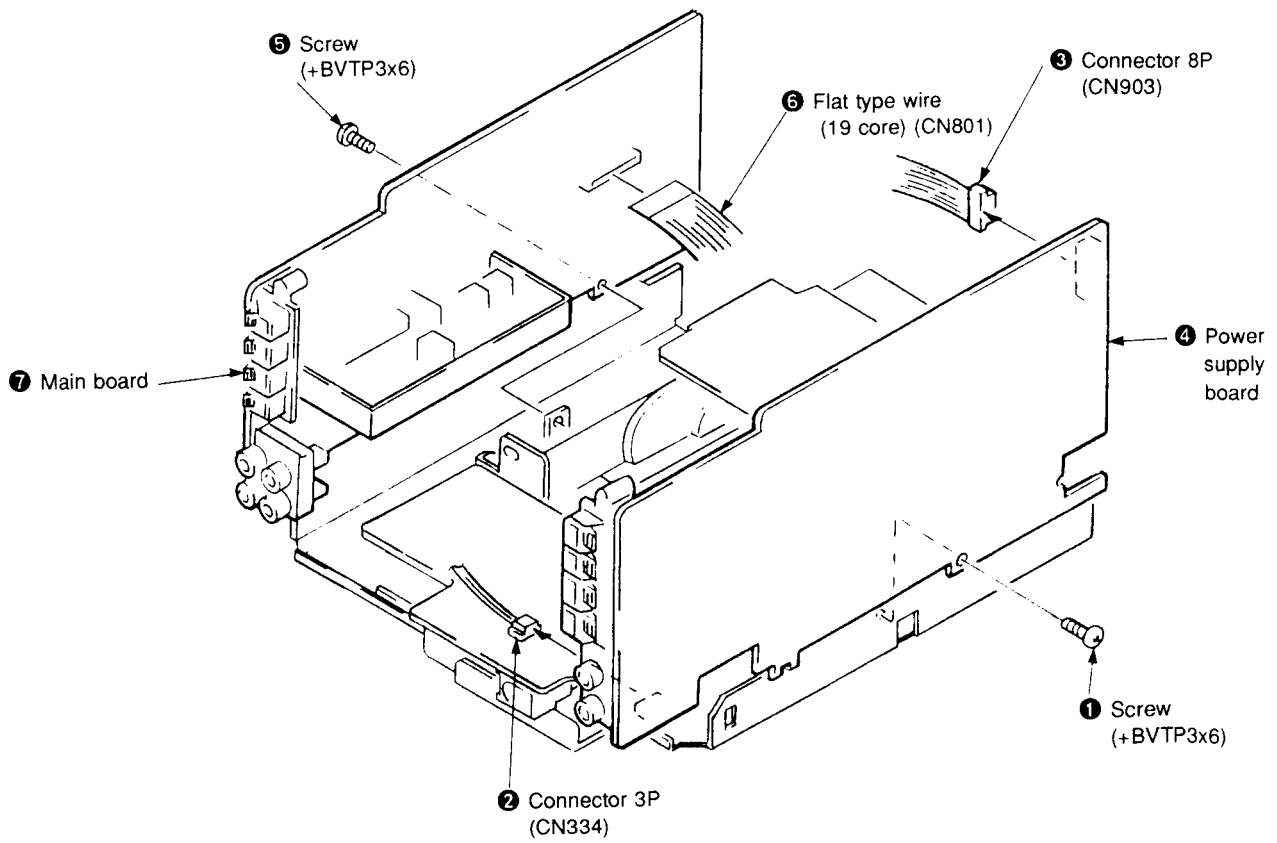
1 SLEEP button (23)
2 MD recorder operating buttons
▷ (play) (14)
II (pause) (14)
■ (stop) (14)
⏮ ⏭ AMS* (14)
REC ● (recording) (17)
REPEAT button (15)
3 CD player operating buttons
▷ (play) (8)
II (pause) (8)
■ (stop) (8)
⏮ ⏭ AMS* (8)
TIME button (9)
REPEAT button (10)
4 BAND button (11)
PRESET –/+ buttons (11)
5 FUNCTION button (24)
6 SYSTEM POWER button (8, 23)
7 VOL +/– buttons (22)

*AMS: Automatic Music Sensor

3-3. POWER BOARD

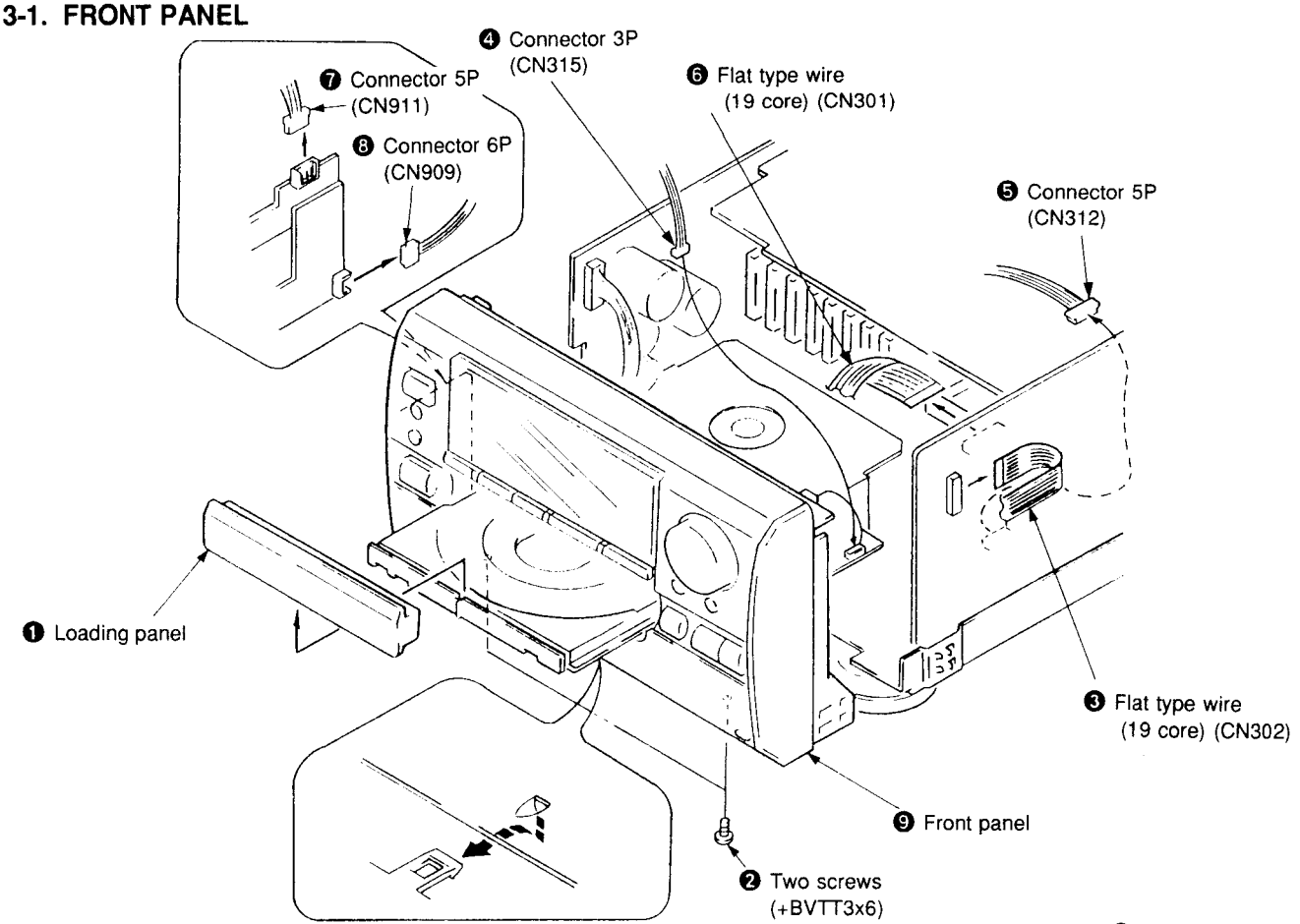


3-4. POWER SUPPLY BOARD AND MAIN BOARD

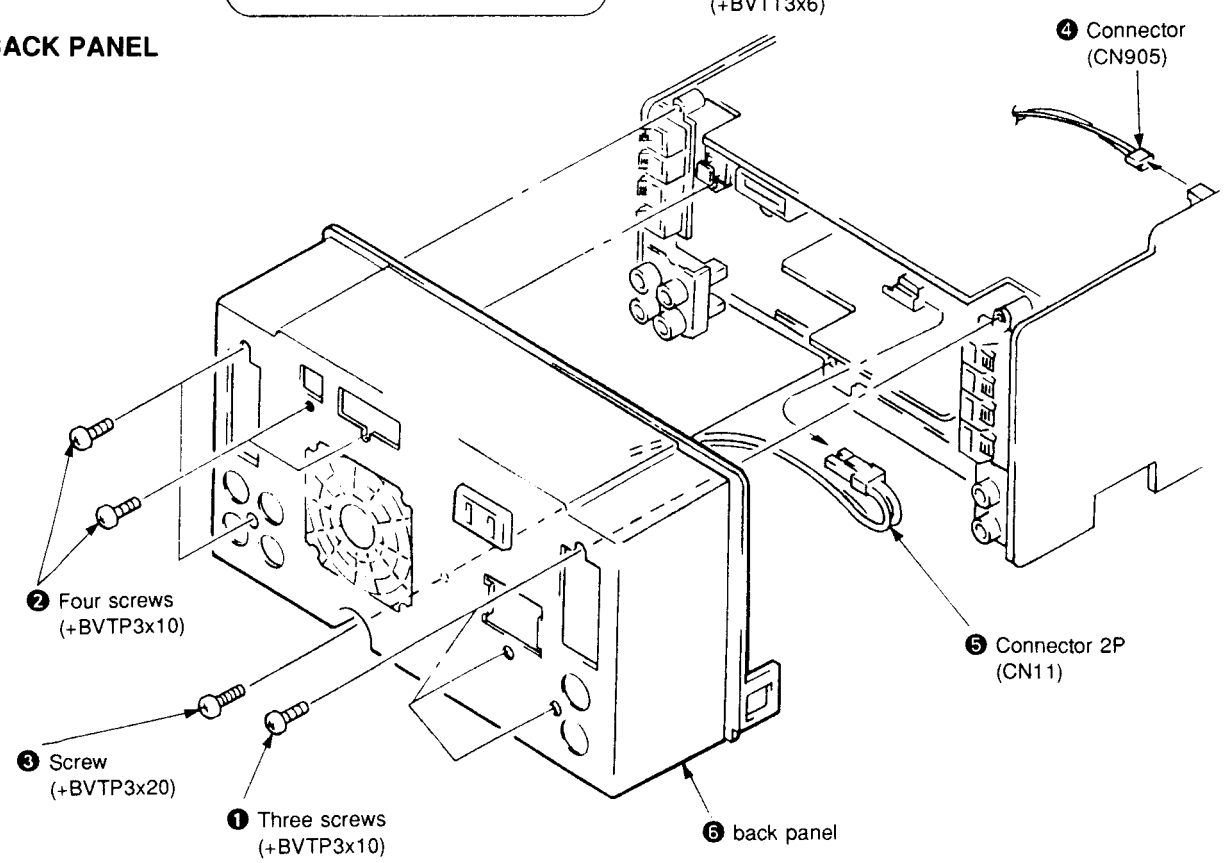


SECTION 3
DISASSEMBLY

3-1. FRONT PANEL


❹ Connector 3P (CN315)
❻ Flat type wire (19 core) (CN301)
❼ Connector 5P (CN911)
❽ Connector 6P (CN909)
❺ Connector 5P (CN312)
❶ Loading panel
❸ Flat type wire (19 core) (CN302)
❾ Front panel
❷ Two screws (+BVTT3x6)

3-2. BACK PANEL



SECTION 4

ELECTRICAL ADJUSTMENTS

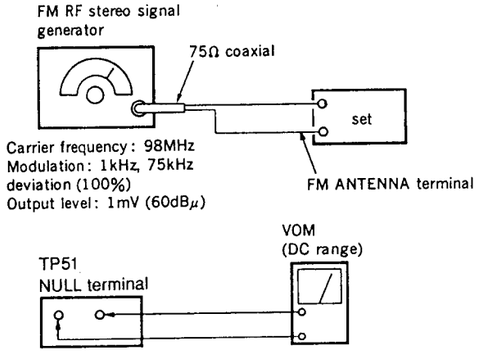
Precautions in Repairing

If the front end unit fails, it is difficult to repair the inner circuits, so replace the entire front end unit.

FM SECTION

FM Discriminator Adjustment (NULL Adjustment)

Setting :
BAND : FM

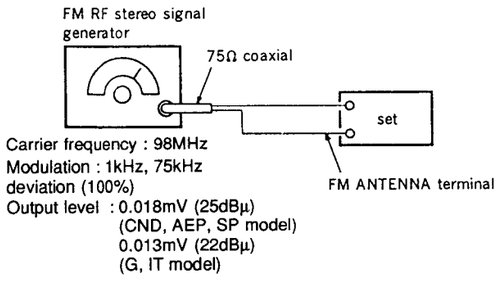


Procedure :
1. Tune the set to 98MHz.
2. Adjust IFT51 for 0Vdc reading on the VOM.

Note : FM Tuning Level adjustment should be made after FM discriminator alignment.

FM Tuned Indication Lighting Level

Setting :
BAND : FM

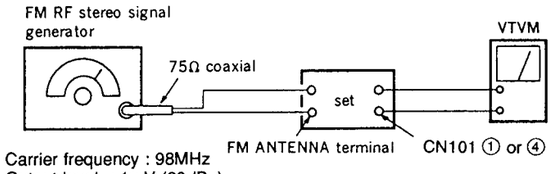


Procedure :
1. Tune the set to 98MHz.
2. Adjust RV52 so that the TUNED indicator goes on.

Note :
CND : Canadian model
IT : Italian mpdel
G : German model
SP : Singapore model

FM Stereo Separation Adjustment

Setting :
BAND : FM



Carrier frequency : 98MHz
Output level : 1mV (60dBμ)
Modulation : L+R 33.75kHzdeviation
L–R 33.75kHz deviation
Pliot Siganl 19kHz 7.5kHz deviation
(CND, AEP, SP model)
L+R 20kHz deviation
L–R 20kHz deviation
Pliot Siganl 19kHz 7.5kHz deviation
(G, IT model)

Procedure :
Tune the set to 98MHz.

FM stereo Signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV53 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV53 for minimum reading.

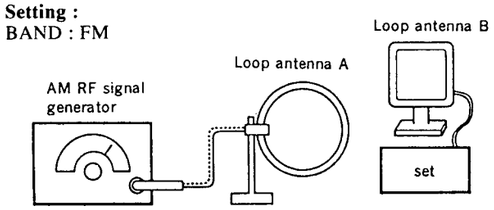
L-CH Stereo separation : Ⓐ – Ⓑ
R-CH Stereo separation : Ⓒ – Ⓓ

The separations of both channels should beequal.

AM SECTION

AM Tuned Indication Lighting Level

Setting :
BAND : FM



Procedure :
1. Set loop antenna A so that the loop antenna B input level becomes 55dBμ/m (0.6m V/m).
2. Tune the set to 1050kHz (CND model) or 999kHz (Except CND model).
3. Adjust RV51 so that the TUNED indicator goes on.

SW Control Voltage Adjustment (Frequency Coverge Adjustment) (SP model)

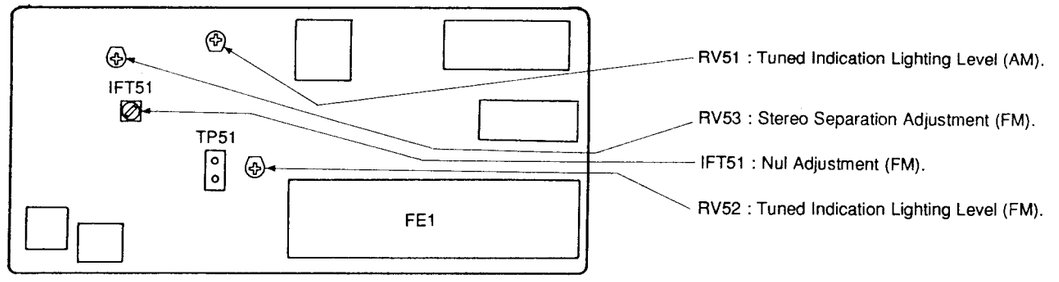
Setting :
BAND : SW
Procedure :
1. Connect digital voltmeter to diode D1 center lead and ground.
2. Adjust for a following value reading on digital voltmeter.

	Set frequency	Adjustment part	Reading on digital voltmeter
SW	f min. 5.95MHz	T2	1.2Vdc
	f min. 17.9MHz	CV2	8.5Vdc

Note :
CND : Canadian model
IT : Italian mpdel
G : German model
SP : Singapore model

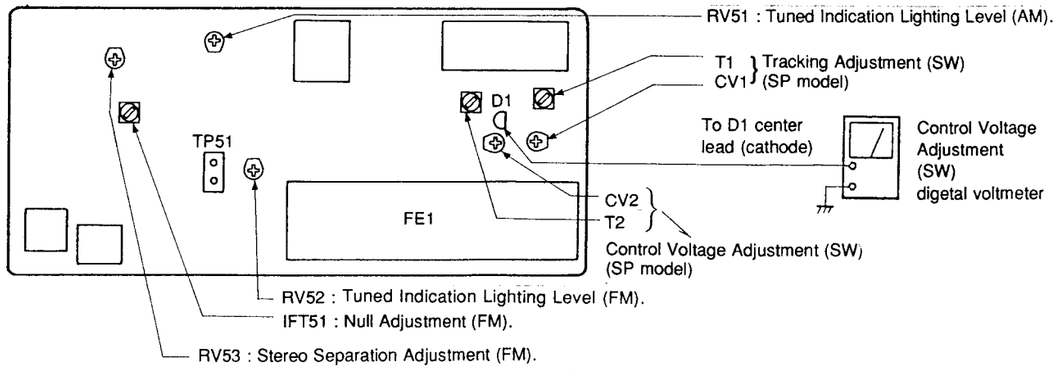
Adjustment Location:

TCB BOARD (AEP, G, IT model)
— Component Side —


IFT51
TP51
FE1
RV51 : Tuned Indication Lighting Level (AM).
RV53 : Stereo Separation Adjustment (FM).
IFT51 : Nul Adjustment (FM).
RV52 : Tuned Indication Lighting Level (FM).

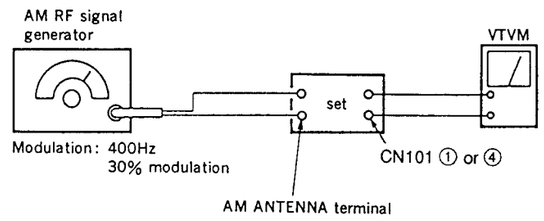
Adjustment Location:

TCB BOARD (CND, SP model)
— Component Side —


RV51 : Tuned Indication Lighting Level (AM).
T1 } Tracking Adjustment (SW)
CV1 } (SP model)
D1
TP51
To D1 center lead (cathode)
Control Voltage Adjustment (SW) digetal voltmeter
CV2 }
T2 }
FE1
Control Voltage Adjustment (SW) (SP model)
RV52 : Tuned Indication Lighting Level (FM).
IFT51 : Null Adjustment (FM).
RV53 : Stereo Separation Adjustment (FM).

SW Tracking Adjustment Adjustment (SP model)

Setting :
BAND : SW



Procedure :
Adjust for a maximun reading on VTVM.

	Set frequency	Adjustment part
SW	f low 7MHz	T1
	f high 17MHz	CV1

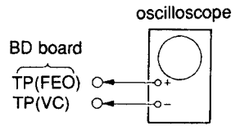
- Repeat the procedures is each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

CD SECTION

Note :

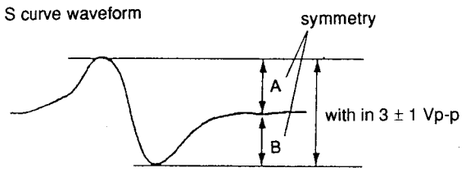
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal lever is low than specified value with the following checks.

S Curve Check



Procedure :

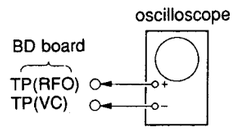
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES : PIN ㊼ of IC101) and TP (VC : PIN ① of IC101) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3 ± 1 Vp-p.



6. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

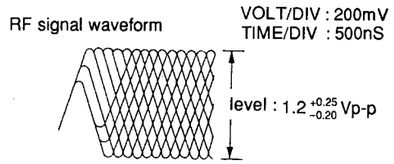


Procedure :

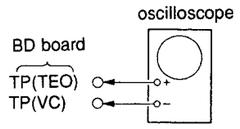
1. Connect oscilloscope to test point TP (RFO : PIN ㊵ of IC101) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

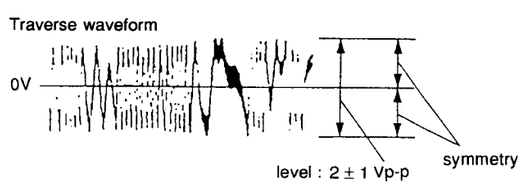


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ : PIN ⑲ of IC202) to ground and TP(TES : PIN ㊸ of IC101) to TP (VC) with lead wire.
2. Connect oscilloscpe to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

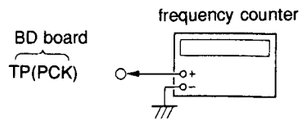


6. Remove the lead wire connected in step 1.

RF Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK : PIN ㊶ of IC201) with lead wire.



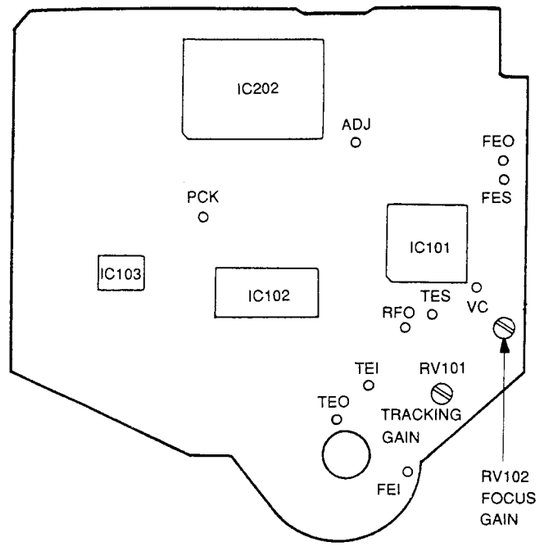
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.
Therefore, do not perform, this adjustment (RV101, RV102).
Please note that is should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location :

[BD BOARD] — Conductor Side —



TEST MODE

1. Perform key check, FL tube check, equalizer check, and memory reste test modes as follows. These test modes can be exited by pressing the [SYSTEM POWER] key.
   (1) Key and FL Tube Check
   While pressing the [FUNCTION] and [TIMER 2] keys, press the [SYSTEM POWER] key. the test mode will be set

   All FL tubes light up

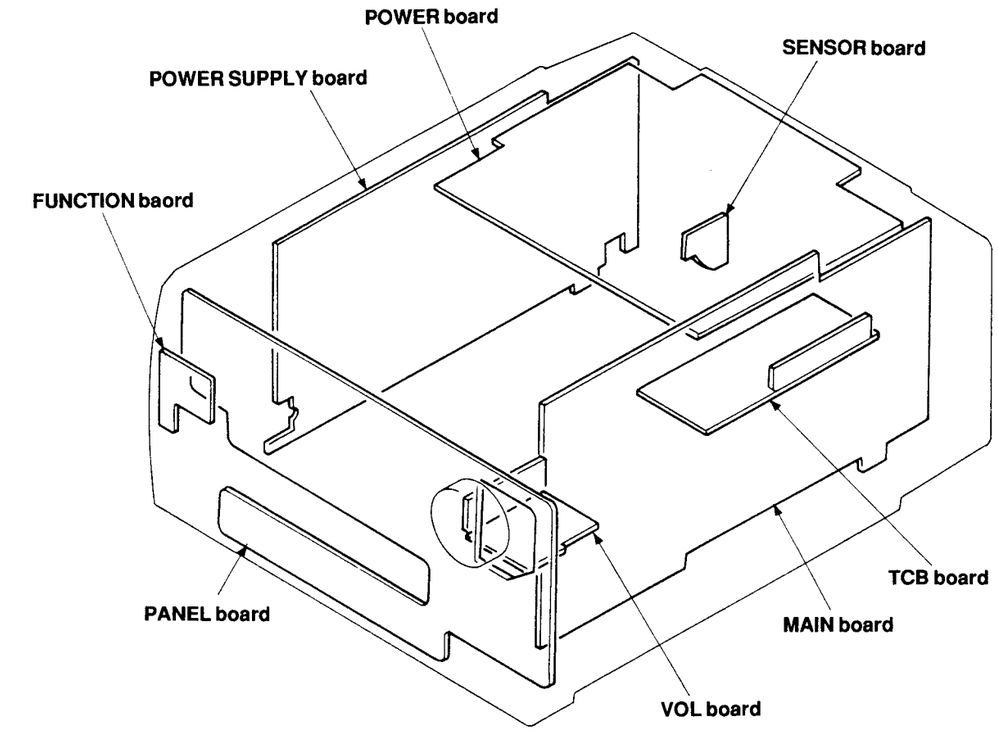
   Press the SYSTEM POWER key

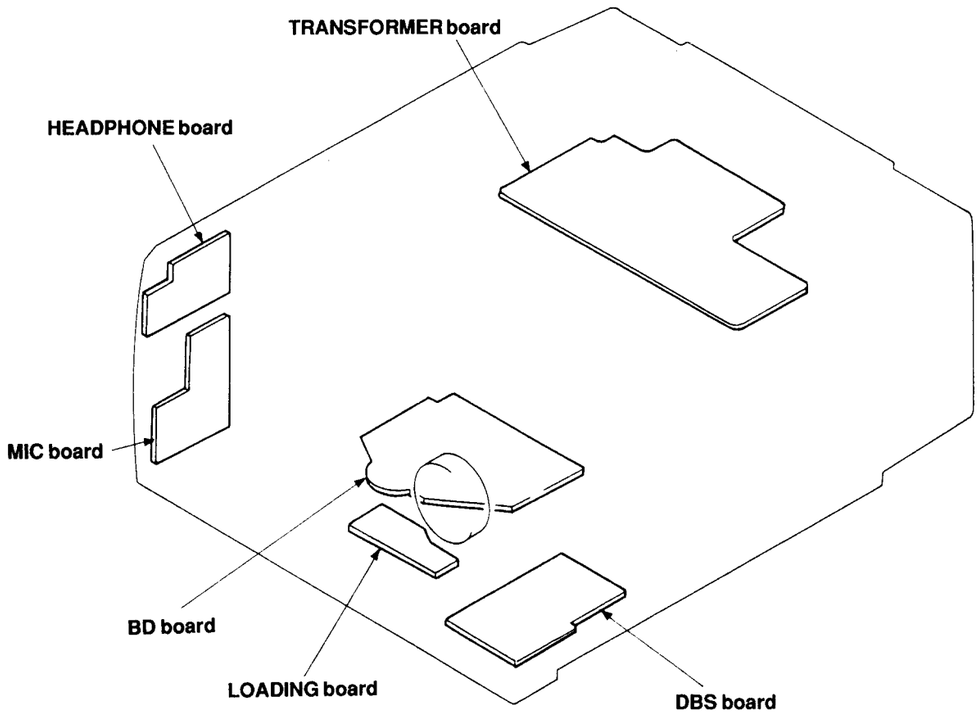
   The test will end.
   (2) Forced Cold Start
   With the power cord disconnected and [SYSTEM POWER] key presses, connect the power supply cord. The internal RAM and non-volatile memory will be reset.

Note : The above will erase the preset memory and return the unit to the initial state. Write down the preset data before performing the test, and be sure to set this data after the test.

SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION





5-2. IC PIN FUNCTIONS

- **IC202 CD System Controller (μPD75116GF-J06-3BE)**

Functions effected by the captioned controller include IC101 (RF signal processing, servo), IC201 (DSP, CLV SERVO), IC203 (Digital filter) and loading control in the CD unit, data exchange with IC301 (System controller), audio bus entry, etc.

Pin No.	Pin Name	I/O	Function
1, 2			Not in use with the model (open).
3	DPCLK	O	Display data transfer clock output to IC301 (system controller).
4	LATCH	O	Latch output to IC203 (Digital filter).
5	SHIFT	O	Shift output to IC203 (Digital filter).
6	ATT	O	Attenuation output to IC203 (Digital filter).
7	$\overline{\text{RESET}}$	I	System reset input. "L": Reset.
8	X2	O	Clock output.
9	X1	I	Clock input (4 MHz).
10	DFCT SW	O	DEFECT circuit ON/OFF switching output of IC101 (CXA1372AQ). It is turned OFF ("H") to focus-search the DISC flaw detection circuit.
11	AMUTE	O	Muting control output. "H": Mute.
12	BSOUT	O	Audio bus output.
13	AFADJ	I	Test mode input. Various test operations are effected upon "L" after turning ON the POWER.
14	LDON	O	Optical pickup laser diode ON/OFF switching output. "H": ON.
15	XLT	O	Serial data latch output to IC201 (CXD2500BQ).
16	CLK	O	Serial data transfer clock output to IC201 (CXD2500BQ).
17	DATA	O	Serial data output to IC201 (CXD2500BQ).
18	MODE	I	Not in use with the model (pull up).
19	ADJ	I	Test mode input. Upon "L", GFS checking is disabled while continuously rotating the spindle no matter whether frame synch is issued during PLAY, PAUSE or SEARCH.
20	GFS	I	GFS signal input from IC201 (CXD2500BQ). "L": NG "H": OK.
21	FOK	I	Focus OK signal input from IC101 (CXA1372AQ). "H": OK.
22, 23		O	Not in use with the model (open).
24	LOD OUT	O	Output to rotate M291 (loading motor) in the loading out direction. *1.
25	LOD IN	O	Output to rotate M291 (loading motor) in the loading in direction. *1.
26	Vss	–	Power terminal (GND).
27	$\overline{\text{IN SW}}$	I	S292 (Loading in switch) input.
28	$\overline{\text{OUT SW}}$	I	S291 (Loading out switch) input.
29	KEYREQ	I	Key data request input from IC301 (system controller).
30	BSIN	I	Audio bus input.
31 to 36			Not in use with the model (GND).
37	SENSE	I	SENS input from IC201 (CXD2500BQ).
38	$\overline{\text{TIMER}}$	I	Not in use with the model (pull up).
39	D/F 16BIT	I	IC201 (CXD2500BQ) digital filter mode setting input. It is fixed at 16 bit, 4fs with the model (pull up).
40			Not in use with the model (GND).
41	SUBQ	I	Subcode Q data input from IC201 (CXD2500BQ).
42		O	Not in use with the model (open).
43	SQCLK	O	Subcode Q data readout clock output to IC201 (CXD2500BQ).
44	SCOR	I	Subcode sync S0 + S1 detection input from IC201 (CXD2500BQ).
45 to 56		O	Not in use with the model (open).
57	NC	I	Not in use with the model (+5V).
58	V_{DD}	–	Power terminal (+5V).
59 to 62	DPDATA3 to 0	I/O	Key data input and display data output with IC301 (system controller).
63, 64			Not in use with the model (open).

*1 Loading motor control

	IN	OUT	BRAKE
LOD OUT ⊗	L	H	H
LOD IN ⊗	H	L	H

- **IC301 Main S**

The terminals
with IC202 (C

Pin No.	
1	D0
2	D1
3	D2
4	D3
5	KEY
6	AU-
7	AU-
8	SIR(
9	Vss
10	POW
11	MU
12	FUN
13	FUN
14	EQ A
15	EQ I
16	MO
17	AM/
18	IFO
19	STE
20	TUN
21	DAT
22	DAT
23	CLO
24	Vss
25	CE
26	LAT
27	TUN
28	PRE
29	FUN
30	CD (
31	
32	
33	VOL
34	VOL
35	$\overline{\text{RST}}$
36	BAC
37	DPC
38	CLC
39	DAT
40	V_{DD}

- **IC301 Main System Controller (μPD78012BGC-607-AB8)**

The terminals work to control tuner section (IC21, 51), FL tube display, spectrum analyzer, according to key input, and data exchange with IC202 (CD system controller).

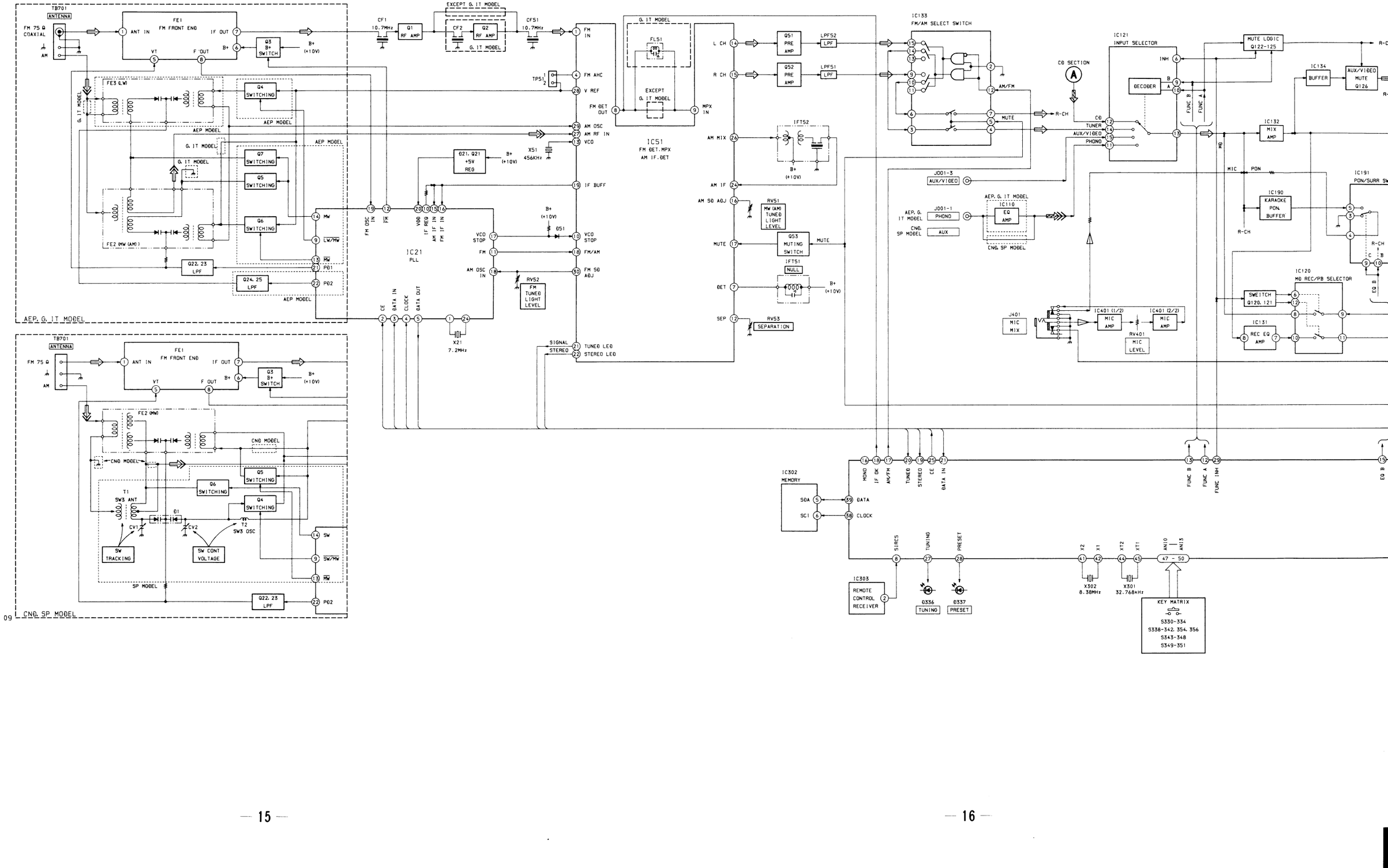
Pin No.	Pin Name	I/O	Function
1	D0	I/O	Display data input and key data output for IC202 (CD system controller).
2	D1	I/O	
3	D2	I/O	
4	D3	I/O	
5	KEY REQ	O	Key data request output to IC202 (CD system controller).
6	AU-BUS IN	I	Audio bus input.
7	AU-BUS OUT	O	Audio bus output.
8	SIRCS	I	Remote commander signal (SIRCS) input.
9	Vss	–	Power terminal (GND).
10	POWER ON/OFF	O	Power ON/OFF output. "L": ON, "H": OFF.
11	MUTE	O	Muting control output. "L": Mute.
12	FUNC A	O	Input selection output to IC121 (Input selector).
13	FUNC B	O	
14	EQ A	O	Surround ON/OFF output.
15	EQ B	O	Karaoke pon ON/OFF output.
16	MONO	O	Not in use with the model.
17	AM/FM	O	AM (MW)/FM selection output. "L": FM, "H": AM.
18	IFOK	O	IF count OK output. "L": OK, "H": NG.
19	STEREO	I	FM stereo discriminating signal from tuner section.
20	TUNED	I	Tuning discriminating signal from tuner section.
21	DATA IN	I	Serial data input from IC21 (PLL).
22	DATA	O	Serial data output to IC21 (PLL), IC130 (Graphic equalizer).
23	CLOCK	O	Serial clock output to IC21 (PLL), IC130 (Graphic equalizer).
24	Vss	–	Power terminal (GND).
25	CE	O	Chip enable output to IC21 (PLL).
26	LATCH	O	Latch output to IC130 (Graphic equalizer).
27	TUNING	O	Tuning LED drive output.
28	PRESET	O	Preset LED drive output.
29	FUNC INH	O	Selection inhibit output to IC121 (Input selector).
30	CD ON	O	CD ON/OFF output.
31		–	Not in use with the model.
32		–	
33	VOL–	O	Volume motor control output.
34	VOL+	O	
35	$\overline{RST}$	I	System reset input.
36	BACK UP	I	Back-up mode detecting.
37	DPCLK	I	CD display data timing input from IC202 (CD system controller).
38	CLOCK	O	Serial clock output to IC302 (Memory).
39	DATA	I/O	Writing data to/reading from IC302 (Memory).
40	V_{DD}	–	Power terminal (+5V).

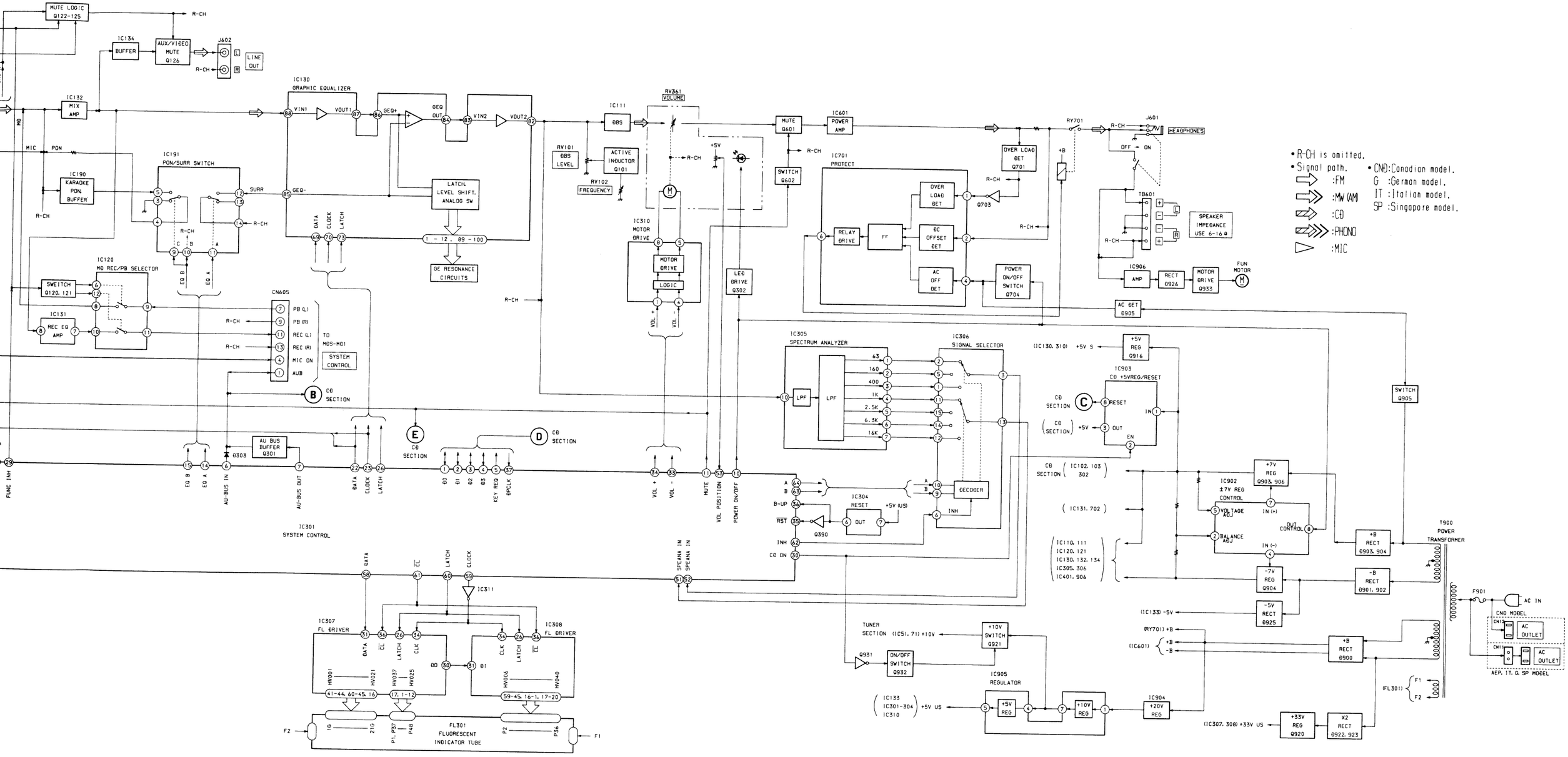
Pin No.	Pin Name	I/O	Function
41	X2	O	Main system clock 8.38 MHz.
42	X1	I	
43	GND	–	Power terminal (GND).
44	XT2	O	Sub system clock 32.768 kHz.
45	XT1	I	
46	AVss	–	Power terminal (GND).
47	ANI0	I	Key input. *1
48	ANI1	I	
49	ANI2	I	
50	ANI3	I	
51	SPEANA IN	I	Spectrum analyzing input (1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz).
52	SPEANA IN	I	Spectrum analyzing input (63 Hz, 160 Hz, 400 Hz).
53	VOL POSITION	I	Volume control position detecting.
54	ANI7		
55	+5V	–	(+5V).
56	+5V	–	
57		–	Not in use with the model.
58	DATA	O	Serial data output to IC307 (FL driver).
59	CLOCK	O	Serial clock output to IC307, 308 (FL driver).
60	LATCH	O	Latch output to IC307, 308 (FL driver).
61	CL	O	Clear output to IC307, 308 (FL driver).
62	INH	O	Spectrum analyzing inhibit output.
63	B	O	Spectrum analyzing selection output.
64	A	O	

*1

Voltage (Vdc)	0.0	0.6	1.3	2.0	2.6	3.2	3.6	5.0
Pin ㊼	TUNING MODE	–	BAND	+	EQ PRESET	FUNCTION		No Input
Pin ㊽	SYSTEM POWER ON/STANDBY	▷II	□	▷▷	◁◁	OPEN/ CLOSE	DIRECT	No Input
Pin ㊾	TIMER1	TIMER REC	PLAY MODE	▷▷I	I◁◁	STEREO/ MONO		No Input
Pin ㊿	TIMER2	MEMORY/ NEXT	KARAOKE PON					No Input

5-3. BLOCK DIAGRAMS
— MAIN SECTION —

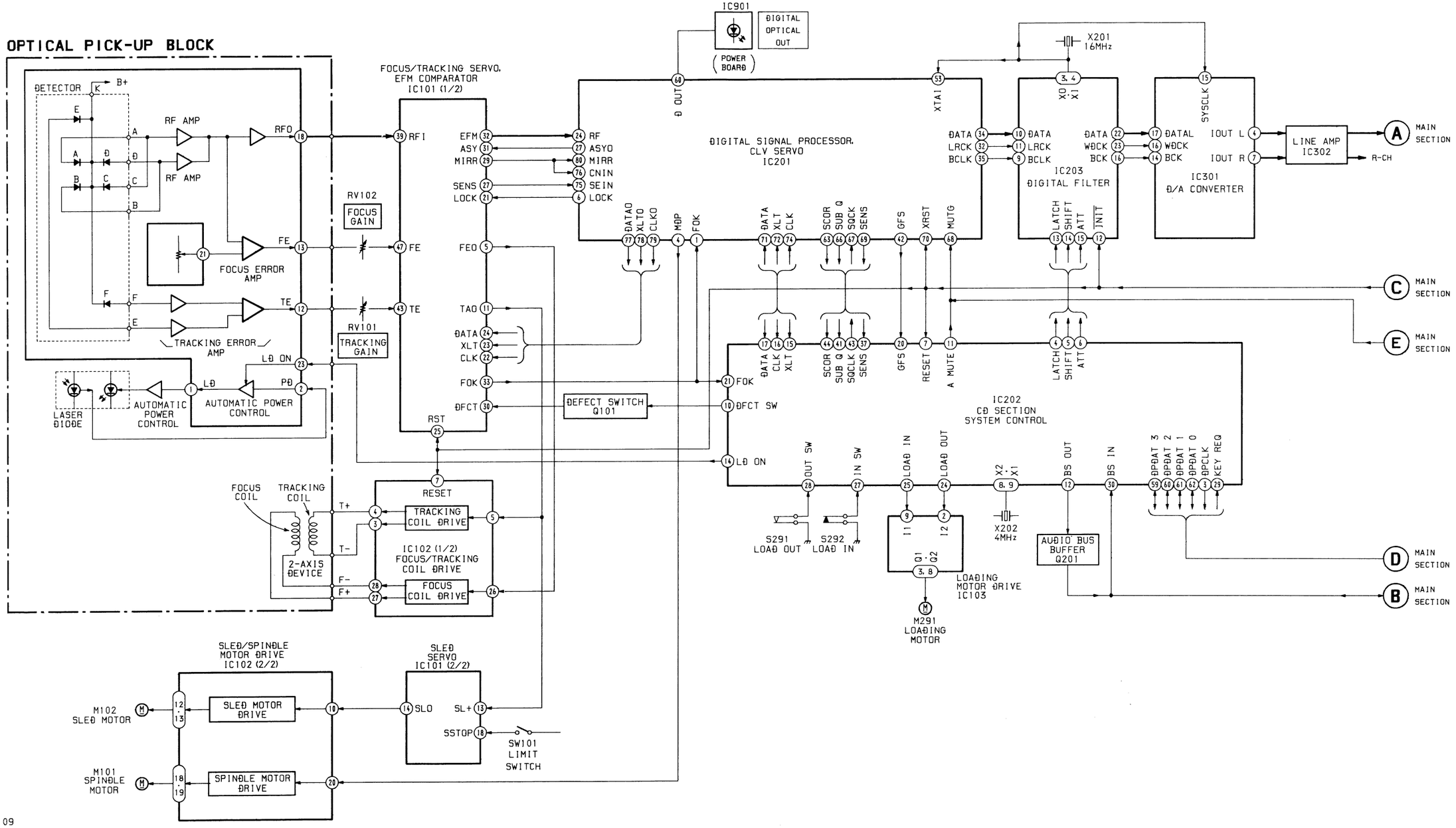




• R-CH is omitted.
• Signal path.
:FM
:MW (AM)
:CD
:PHONO
:MIC

• CND: Canadian model.
G : German model.
IT : Italian model.
SP : Singapore model.

— CD SECTION —



09

5-4. PRINTED WIRING BOARDS — TUNER SECTION —

- **See page 11 for Circuit Boards Location.**
- **See page 50 for Semiconductor Lead Layouts.**

- **Semiconductor Location (AEP, G, IT Model)**

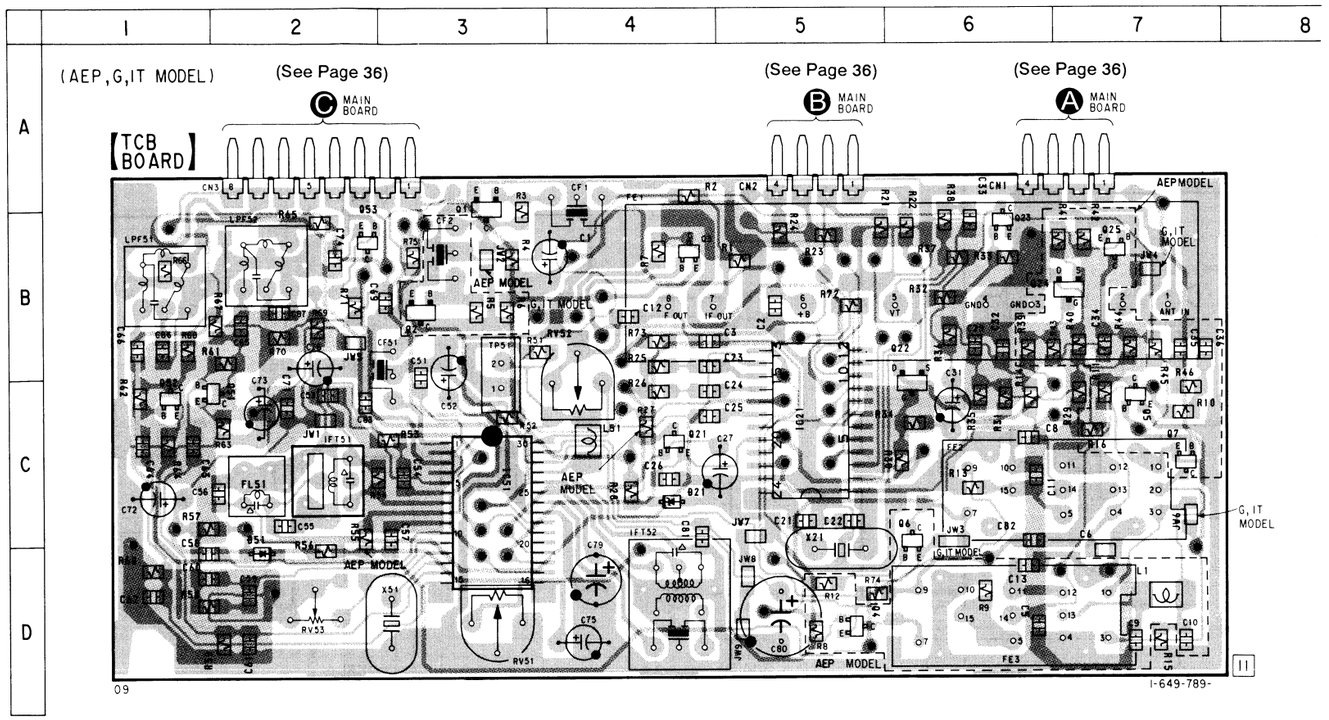
Ref. No.	Location
D21	C-4
D51	C-2
IC21	C-5
IC51	C-3
Q1	A-3
Q2	B-3
Q3	B-4
Q4	D-5
Q5	C-7
Q6	C-6
Q7	C-7
Q21	C-4
Q22	B-6
Q23	B-6
Q24	B-6
Q25	B-7
Q51	C-2
Q52	C-1
Q53	B-2

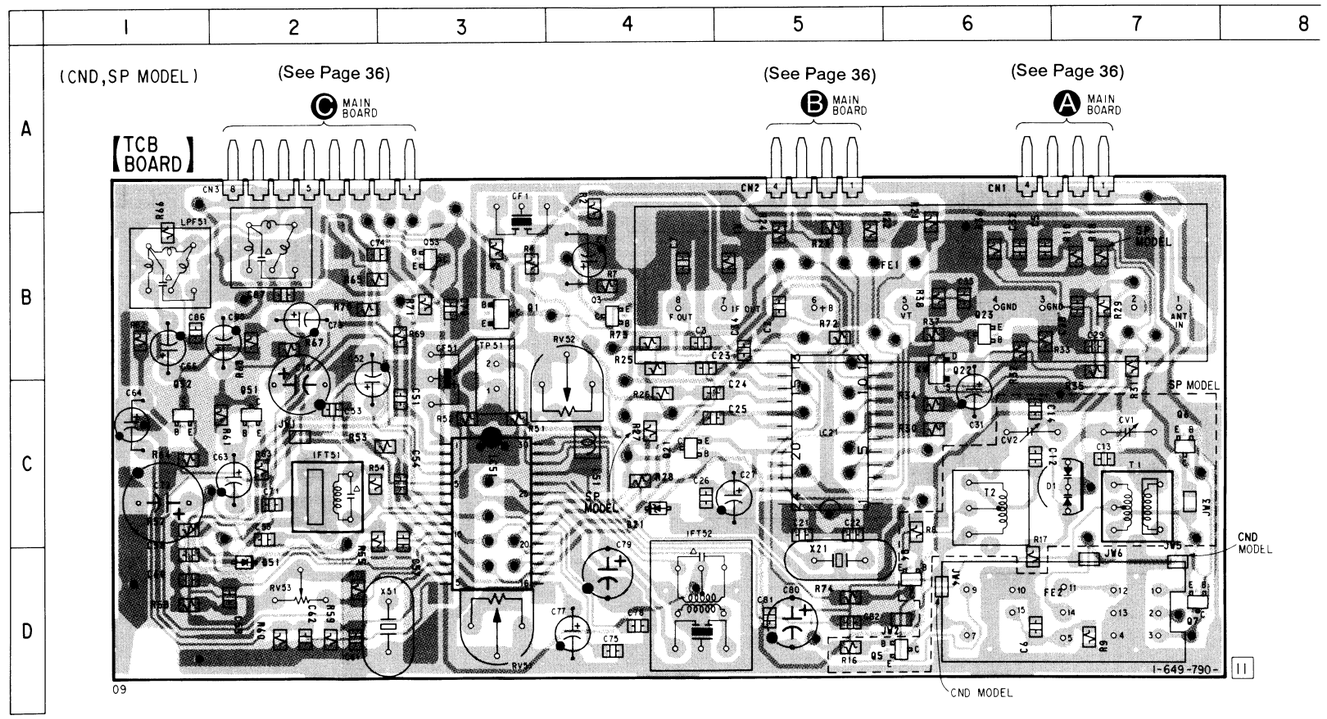
- **Semiconductor Location (CND, SP Model)**

Ref. No.	Location
D1	C-7
D21	C-4
D51	D-2
IC21	C-5
IC51	C-3
Q1	B-3
Q3	B-4
Q4	D-6
Q5	D-6
Q6	C-7
Q7	D-7
Q21	C-4
Q22	B-6
Q23	B-6
Q51	C-2
Q52	C-1
Q53	B-3

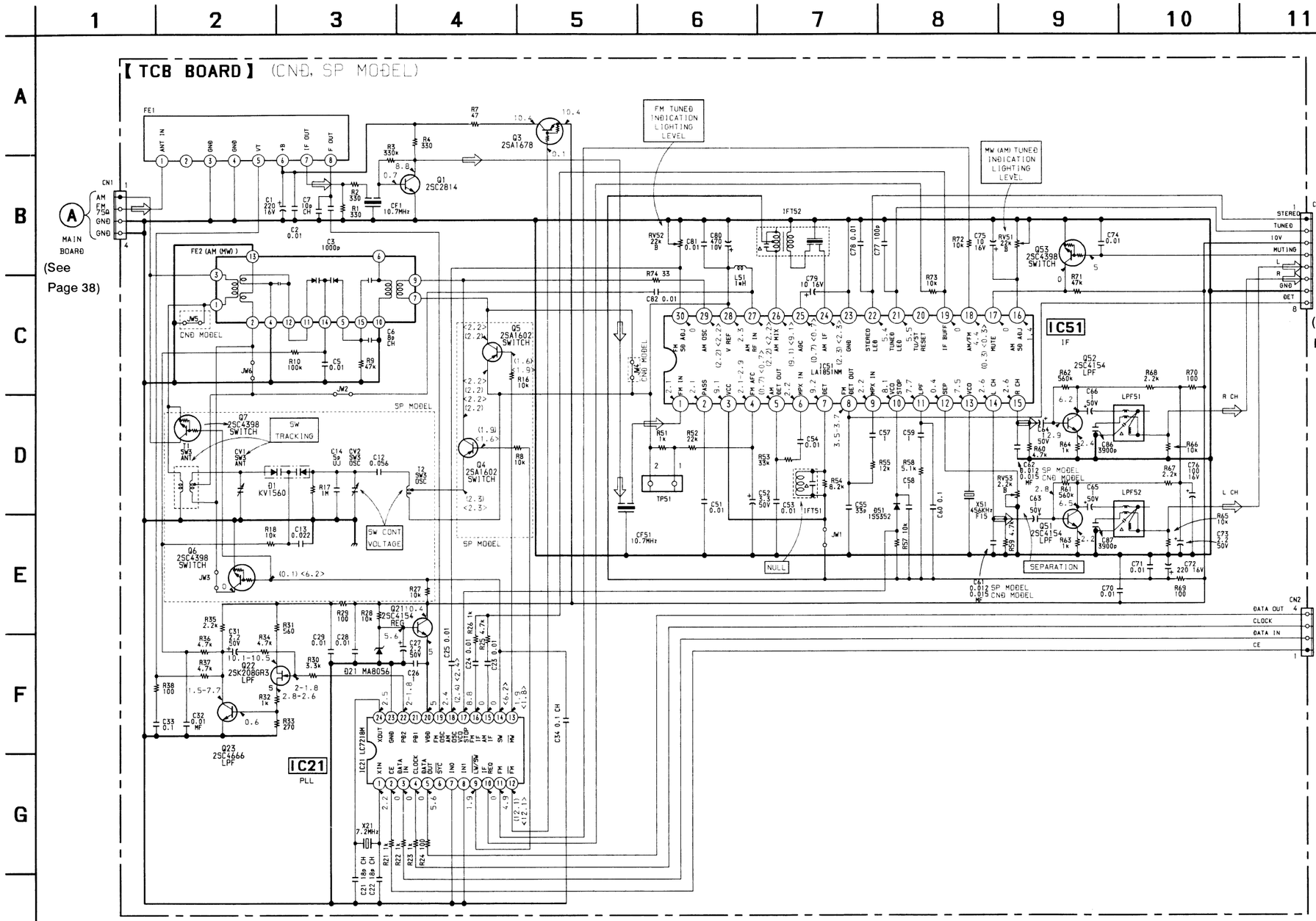
Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enable seeing.
- ▒▒▒ : Pattern of the rear side.
- CND : Canadian model.
- G : German model.
- IT : Italian model.
- SP : Singapore model.





5-5. SCHEMATIC DIAGRAM — TUNER SECTION —

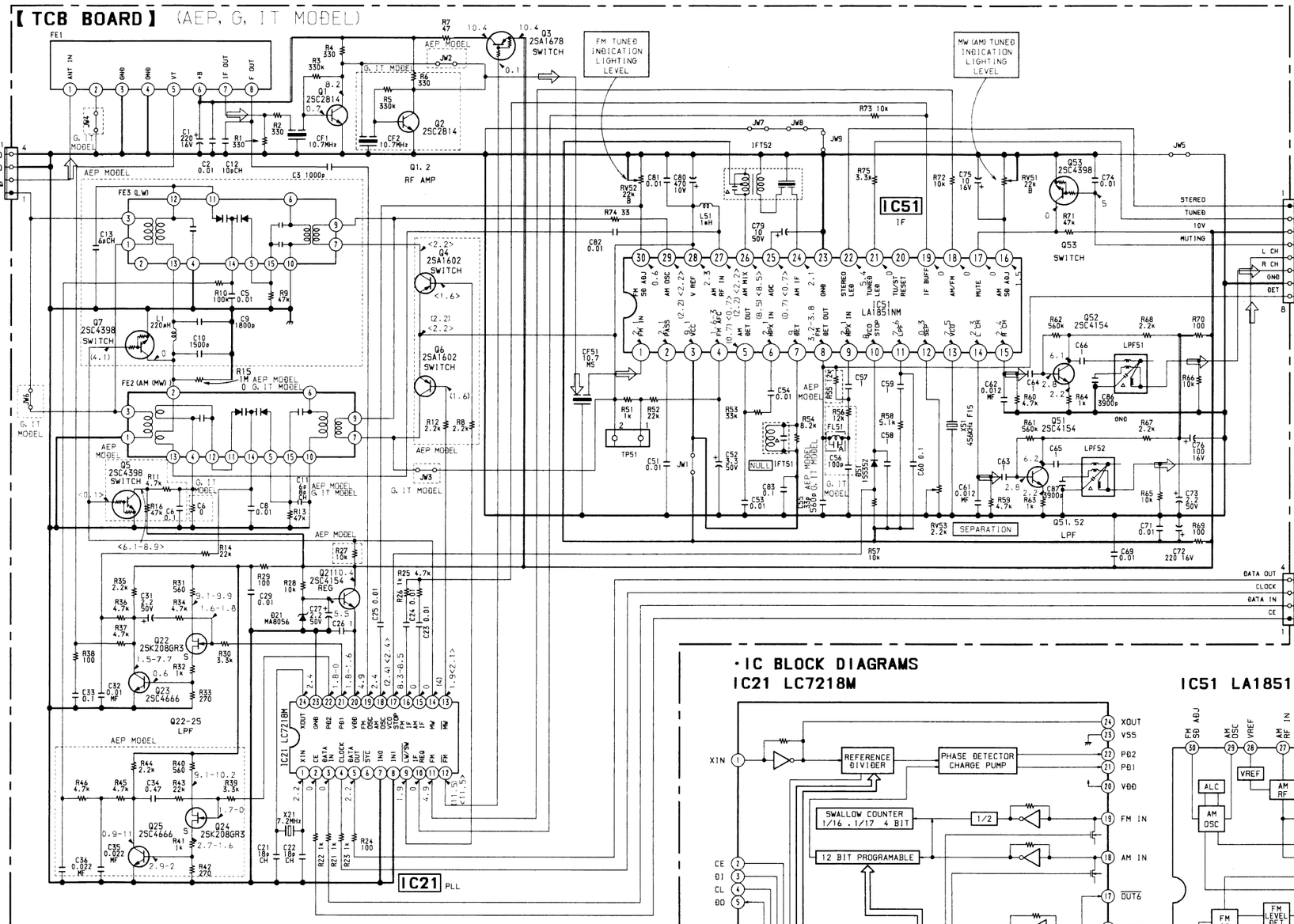


NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ——— : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ) : AM (MW)
  < > : SW
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- CND: Canadian model.
  SP : Singapore model.
- Signal path.
  ⇨ : FM

09

【 TCB BOARD 】 (AEP, G, IT MODEL)



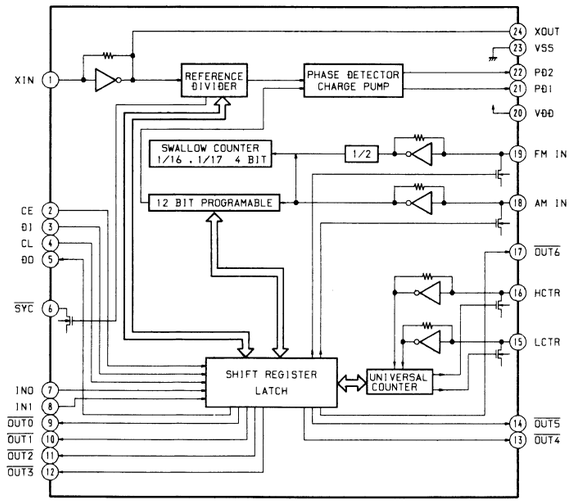
09

NOTE

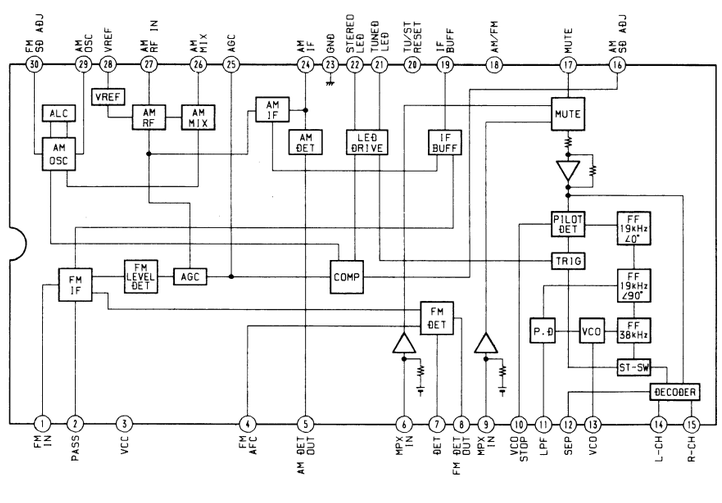
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ——— : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark: FM
  ( ): AM (MW)
  < >: LW
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- G : German model.
  IT : Italian model.
- Signal path.
  ⇨ : FM

· IC BLOCK DIAGRAMS

IC21 LC7218M



IC51 LA1851NM

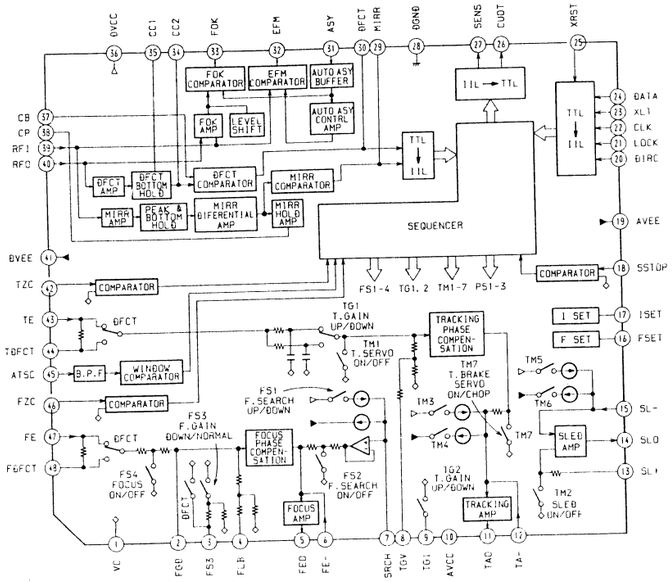


5-6. SCHEMATIC DIAGRAM — CD SECTION —

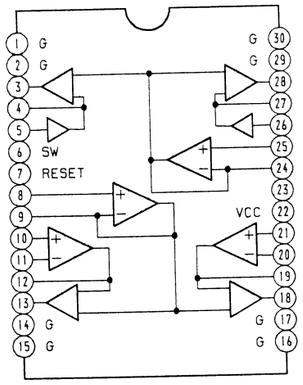
• See page 12 for IC Pin Functions. (IC202)

• IC Block Diagrams

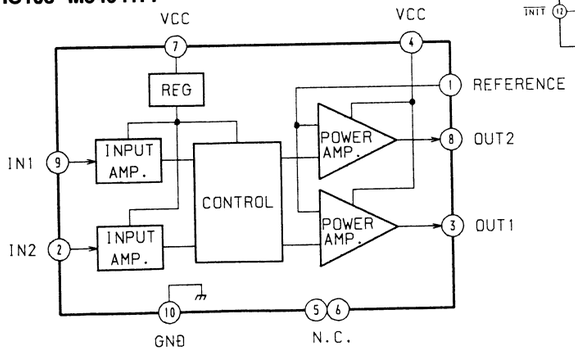
IC101 CXA1372AQ



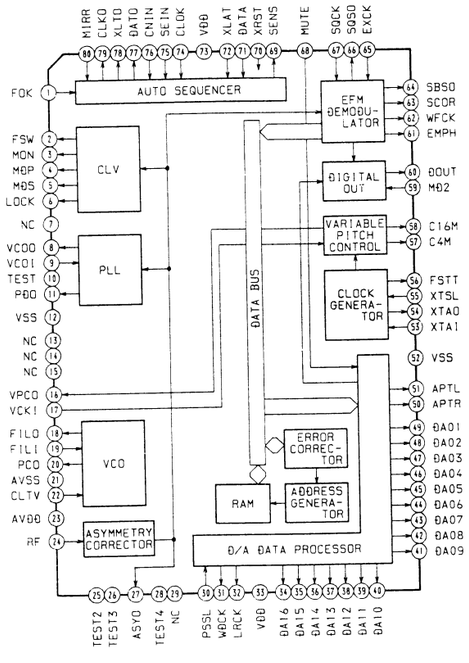
IC102 LA6525M



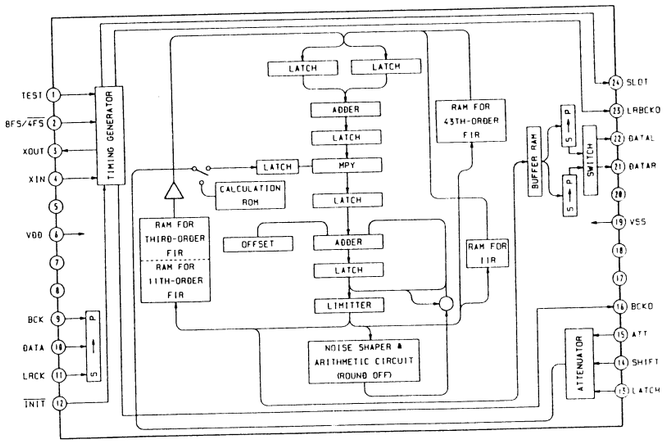
IC103 M54641FP



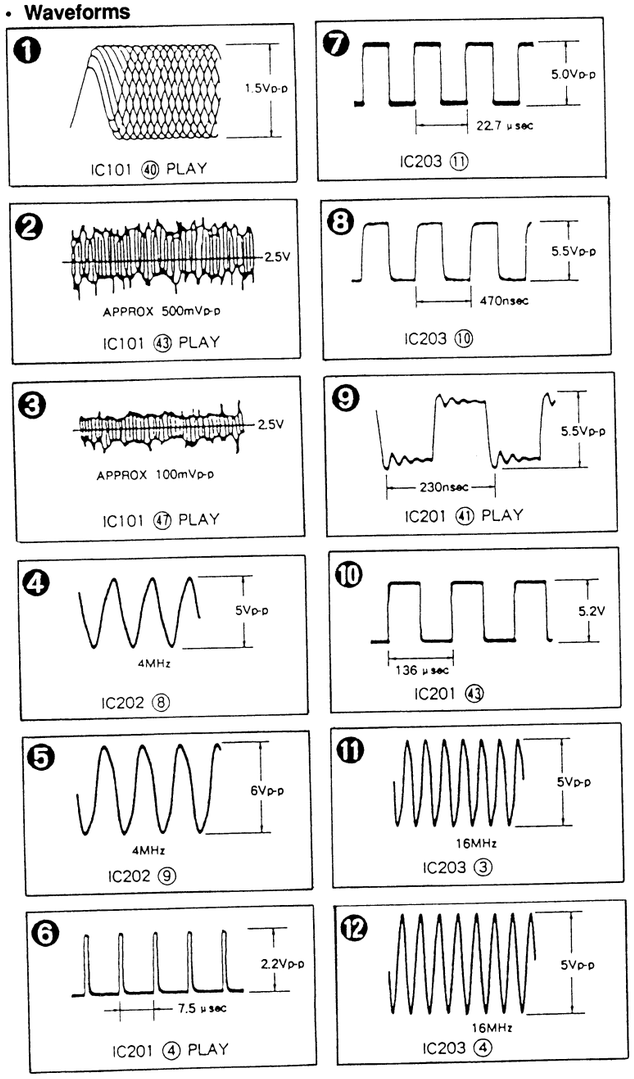
IC201 CXD2500BQ



IC203 MSM6538-01GS

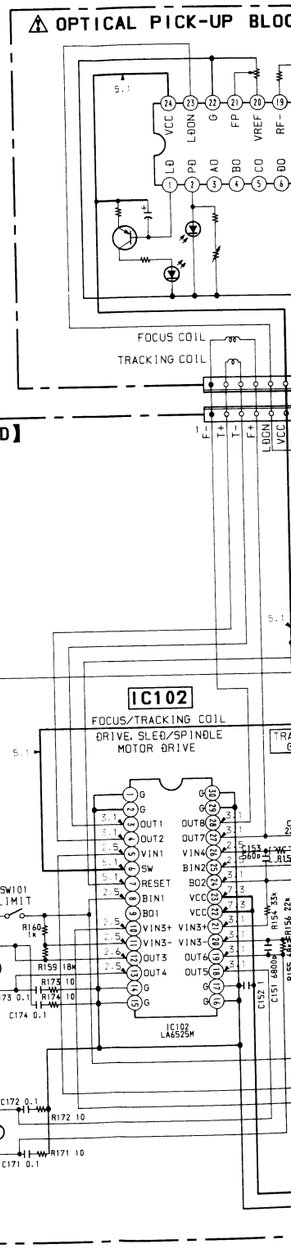


• Waveforms


1 1.5Vp-p IC101 (40) PLAY
2 2.5V APPROX 500mVp-p IC101 (43) PLAY
3 2.5V APPROX 100mVp-p IC101 (47) PLAY
4 5Vp-p 4MHz IC202 (8)
5 6Vp-p 4MHz IC202 (9)
6 2.2Vp-p 7.5 µsec IC201 (4) PLAY
7 5.0Vp-p 22.7 µsec IC203 (11)
8 5.5Vp-p 470nsec IC203 (10)
9 5.5Vp-p 230nsec IC201 (41) PLAY
10 5.2V 136 µsec IC201 (43)
11 5Vp-p 16MHz IC203 (3)
12 5Vp-p 16MHz IC203 (4)

NOTE

- All capacitors are in µF unless otherwise noted. pF: µµF
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ——— : B+ line.
- — — — : B− line.
- ▭ : adjustment for repair.



s are in μF unless otherwise noted. pF: μμF
are not indicated except for electrolytics
.
are in Ω and 1/4W or less unless otherwise

ternal component.
Line.
Line.
justment for repair.

- Voltages and waveforms are dc with respect to ground in playback mode.
  no mark: CD
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

【LOADING BOARD】

- Signal path.
  : CD
  : digital out

⚠ OPTICAL PICK-UP BLOCK (KSS-390A)

OARD】

IC102
FOCUS/TRACKING COIL DRIVE, SLED/SPINDLE MOTOR DRIVE
IC102 LA6525M

IC101
FOCUS/TRACKING/SLED SERVO, EFM COMPARATOR
IC101 CXA1372AQ

IC202
CD SECTION SYSTEM CONTROL
IC202 μPD75116GF-J06-3BE

IC201
DIGITAL SIGNAL PROCESSOR, CLV SERVO
IC201 CXD2500BQ

IC103
LOADING MOTOR DRIVE
IC103 MS4641FP

IC203
DIGITAL FILTER
IC203 MSM6538-01GS-VKR1

IC301
D/A CONVERTER
IC301 PCM67U-B

IC302
LINE AMP
IC302 RC4558PS

Q101
DEFECT SWITCH
Q101 2SC3395

Q201
AUDIO BUS BUFFER
Q201 2SC4154

Q201 1SS352

SW101
LIMIT

FOCUS COIL
TRACKING COIL

CN102 12P

CN101 5P

CN201 5P

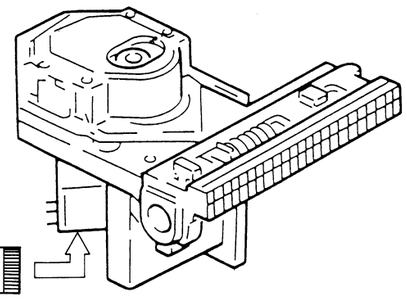
CN103 19P
KEYREQ
DPCLK
D0
D1
D2
D3
N.C
AUB
AUB GND
D.O
G7
+7V
MUTE
Rch
A.GND
Lch
D.GND
CDP +5V
RESET

(See Page 39)
D MAIN BOARD CN801

5-7. PRINTED WIRING BOARDS — CD SECTION —

- See page 11 for Circuit Boards Location.
- See page 50 for Semiconductor Lead Layouts.

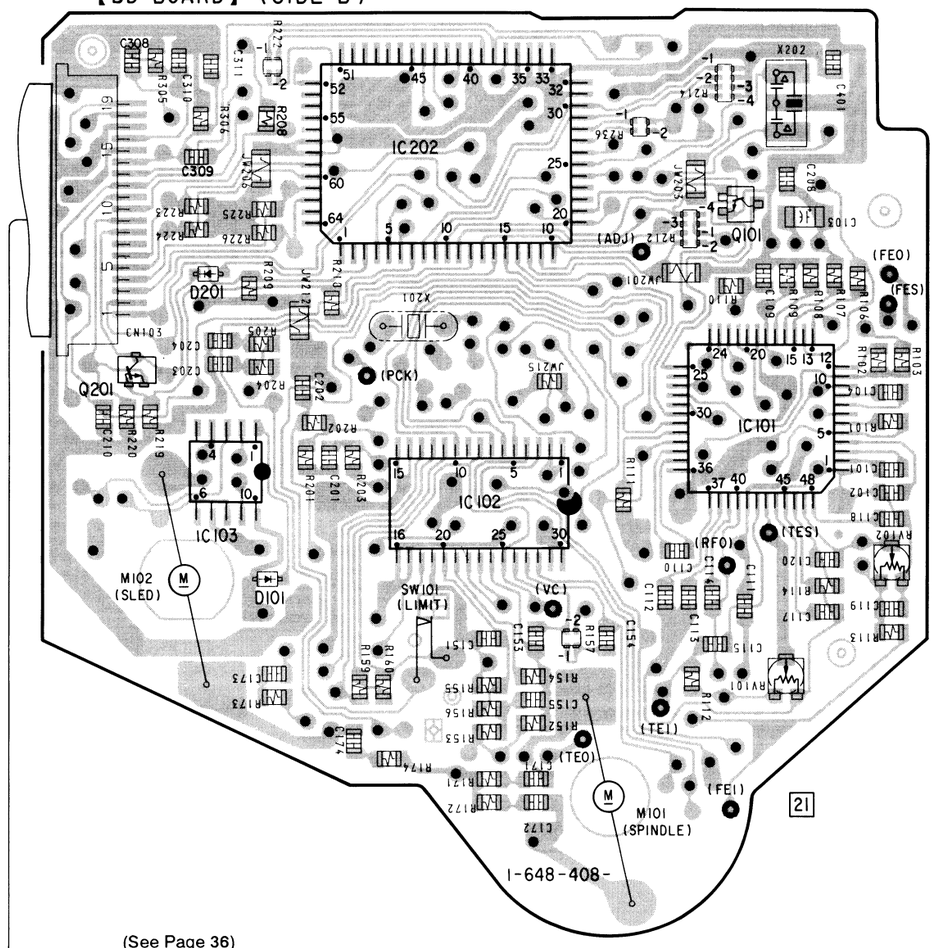
【BD BOARD】(SIDE A)



OPTICAL
PICK-UP BLOCK
(KSS-390A)

09

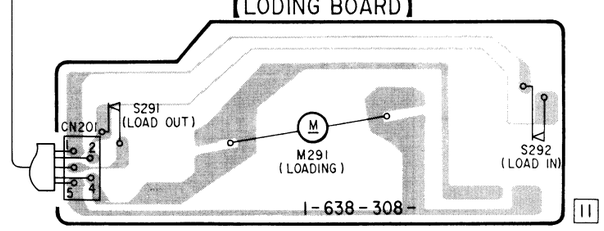
【BD BOARD】(SIDE B)



(See Page 36)

Ⓓ MAIN BOARD
CN801

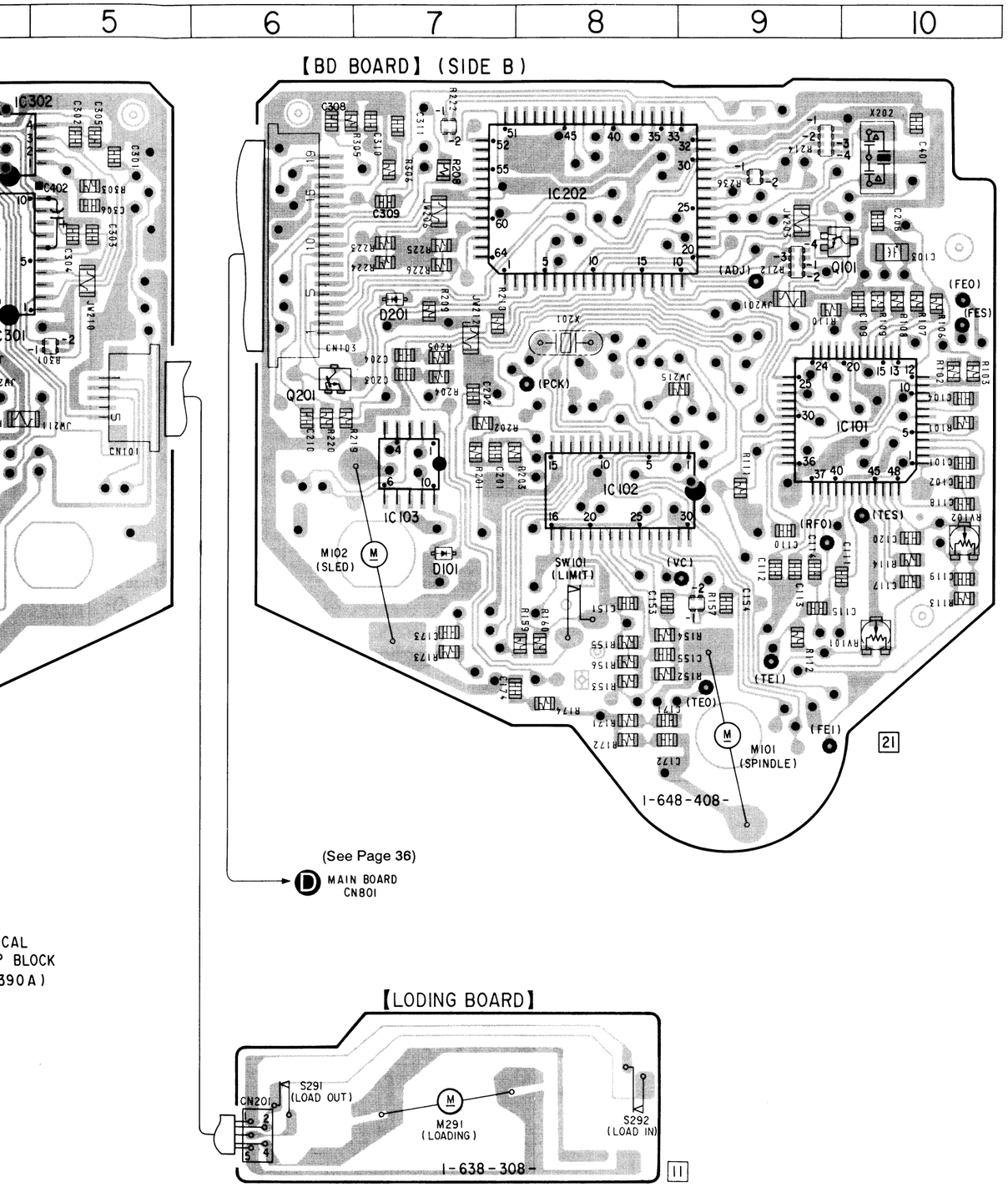
【LODING BOARD】



- Semiconduc
  Location

Ref. No.	Loca
D101	D-7
D202	B-7
IC101	C-1
IC102	C-8
IC103	C-7
IC201	C-3
IC202	A-8
IC203	B-3
IC301	B-4
IC302	A-5
Q101	B-1
Q201	C-6

Note:
- ■ : parts
- ● : Thro
- △ : inter
- : Patte (The



CAL
BLOCK
390A)

- **Semiconductor Location**

Ref. No.	Location
D101	D-7
D202	B-7
IC101	C-10
IC102	C-8
IC103	C-7
IC201	C-3
IC202	A-8
IC203	B-3
IC301	B-4
IC302	A-5
Q101	B-10
Q201	C-6

Note:

- ■ : parts mounted on the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒ : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)

5-8. PRINTED WIRING BOARDS — MAIN SECTION —

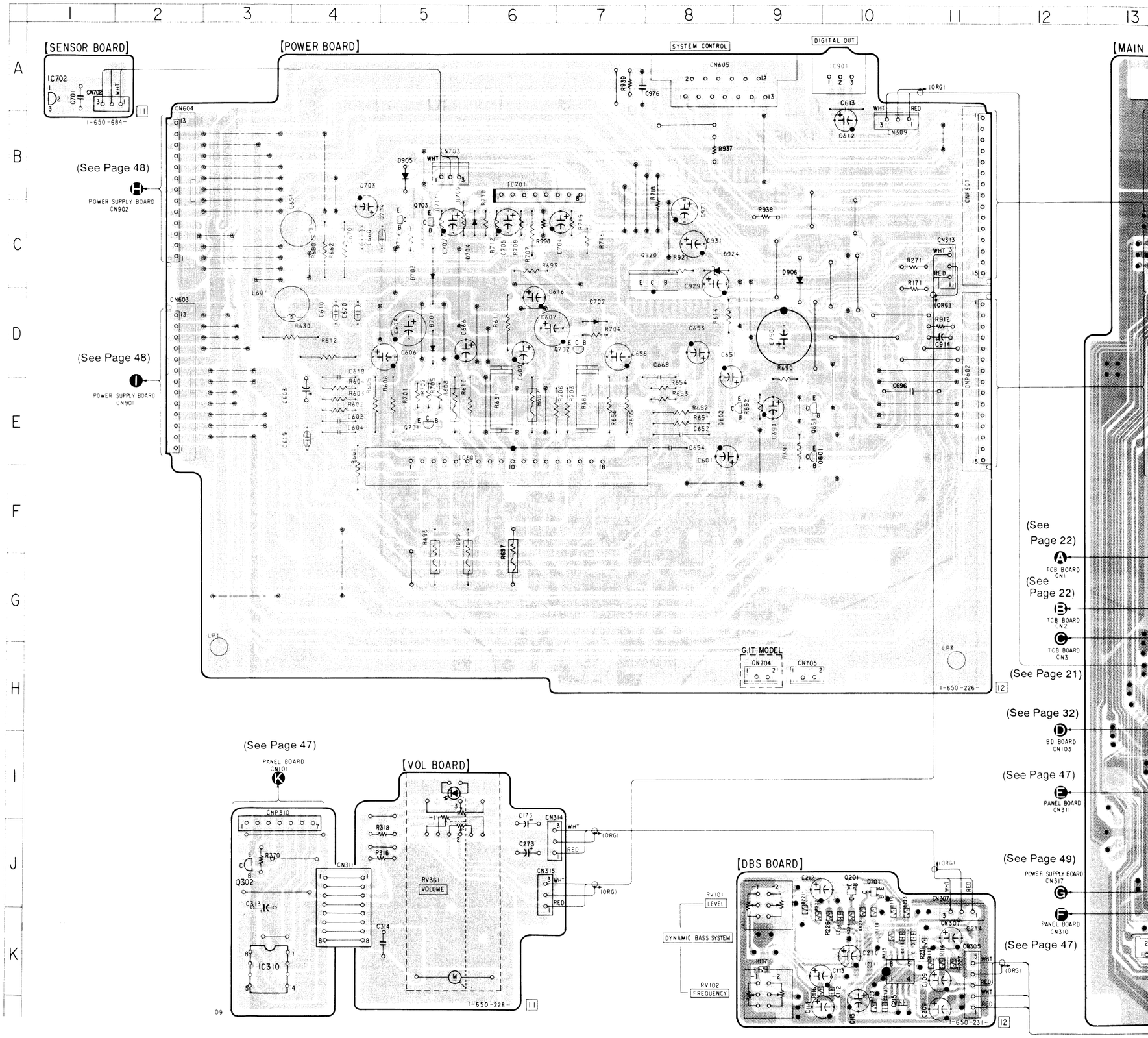
- **See page 11 for Circuit Boards Location.**
- **See page 50 for Semiconductor Lead Layouts.**

- **Semiconductor Location**

Ref. No.	Location
D101	C-16
D163	J-15
D190	H-17
D191	H-17
D201	C-16
D701	D-5
D702	D-7
D703	C-5
D704	C-6
D905	B-5
D906	C-9
D924	C-8
IC110	C-17
IC111	K-10
IC120	E-17
IC121	D-17
IC130	J-16
IC131	D-16
IC132	C-15
IC133	G-15
IC134	B-16
IC190	G-17
IC191	G-17
IC310	K-3
IC601	E-6
IC701	B-6
IC702	A-1
IC901	A-10
Q101	J-10
Q120	E-17
Q121	F-16
Q122	D-16
Q123	D-16
Q124	E-16
Q125	D-16
Q126	C-16
Q201	J-10
Q226	C-16
Q302	J-3
Q601	F-9
Q602	E-8
Q651	E-9
Q701	E-5
Q702	D-7
Q703	C-5
Q704	C-5
Q920	C-8

Note:

- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- : Pattern from the side which enable seeing.
- Pattern of the rear side.
- CND : Canadian model.
- G : German model.
- IT : Italian model.
- SP : Singapore model.



【POWER BOARD】

SYSTEM CONTROL

DIGITAL OUT

CN605

IC901

CN604

CN603

CN703

IC701

CN601

CN602

CN309

CN313

CN704

CN705

LP1

LP3

I-650-226-

12

【MAIN BOARD】

AEP,G,IT MODEL PHONO

CND,SP MODEL AUX1 AUX/VIDEO

FM75Ω

AM

J100

CN501

CN335

CN309

CN801

CN315

CN312

CN302

IC131

IC190

IC191

IC1A

POWER SUPPLY BOARD CN344

(See Page 48)

AEP,G,IT MODEL

(See Page 22)

A TCB BOARD CN1

(See Page 22)

B TCB BOARD CN2

C TCB BOARD CN3

(See Page 21)

(See Page 32)

D BD BOARD CN103

(See Page 47)

E PANEL BOARD CN311

(See Page 49)

G POWER SUPPLY BOARD CN317

F PANEL BOARD CN310

(See Page 47)

I-650-230-

12

(See Page 47)

PANEL BOARD CN101

K

【VOL BOARD】

CNP310

CN311

CN314

CN315

RV361 VOLUME

IC310

Q302

I-650-228-

11

【DBS BOARD】

CN307

CN305

RV101 LEVEL

RV102 FREQUENCY

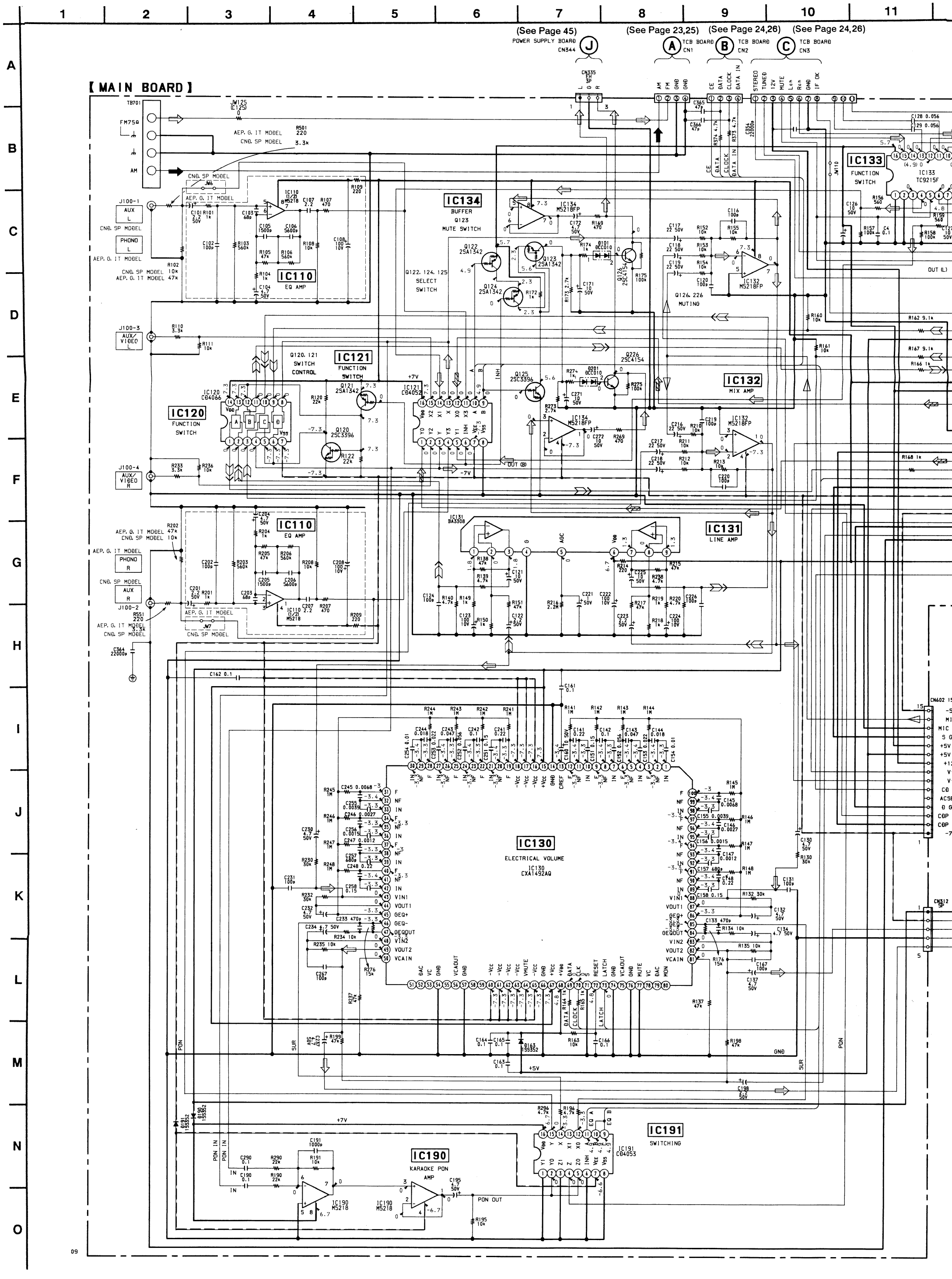
DYNAMIC BASS SYSTEM

I-650-231-

12

09

5-9. SCHEMATIC DIAGRAM — MAIN SECTION —



(See Page 24,26)

TCB BOARD
CN3

(See Page 44)

G POWER SUPPLY BOARD
CN317

(See Page 30)

D B0 BOARD
CN103

CN316 EH 2P

CN801 19P: RST, C0P 5V, 0 GND, Lch, A GND, Rch, +7V, 0 OUT, AUB GND, AUB, 03, 02, 01, 00, 0PCLK, KEY REQ

CN308 5P: 0 OUT, 0 GND, C0P 5V

IC133 FUNCTION SWITCH
IC133 TC9215F

JW110

C128 0.056
C129 0.056
C126 10 50V
C127 10 50V
C174 22 50V
C274 22 50V
C777 2200 10V
R156 560
R157 100k
R158 100k
R159 560
C4 0.1
R717 1 1/2W

OUT (L)

R160 10k
R161 10k
R162 9.1k
R167 9.1k
R166 1k
R168 1k
R128 100k
R228 100k

CN302 19P:
AC-SENS
NC
EQ B
EQ A
B
A
MUTE
POWER
KEY REQ
03
02
01
00
Vf
S GND
+5V (S)
+5V US
+33 (US)
Vf

(See Page 43)

F PANEL BOARD
CN310

C355 22000p

CN301 19P:
+7V
-7V
CLOCK
DATA
DATA IN
TUNE0
IF OK
STEREO
FM/AM
MONO
AUB
AUB GND
0PCLK
CE
LATCH
INH
SPEANASIG
C0 ON

(See Page 43)

E PANEL BOARD
CN311

L102 47mH
C352 22000p
C353 22000p
AVI
JW10
C356 56p
C357 56p
C358 56p
C359 56p
CE
LATCH
INH

CN601 15P:
+7V
NC
GND
NC
+33V (US)
+7V C0
AUB GND
AUB
POWER
MUTE
REC (R)
A GND
REC (L)
PB (R)
PB (L)

CN602 15P:
-5V
MIC
MIC GND
S GND
+5V US
+5V (S)
+12V
Vf
Vf
C0 ON
ACSENS
0 GND
C0P RST
C0P +5V
-7V

C130 4.7 50V
R130 30k

PON

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ⚠ :nonflammable resistor.
- ⚠ :fusible resistor.
- ▭ :panel designation.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ——— :B+ Line.
- — — — :B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: FM
  ( ) : AM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- CNΘ: Canadian model.
  G : German model.
  IT : Italian model.
  SP : Singapore model.
- Signal path.
  ⇨ :FM ⇨ :CΘ
  ➡ :AM ⇨ :digital out
  ⇨ :PB ▷ :MIC
  ⇨ :REC

【DBS BOARD】

CN312 5P: +7V, -7V, L CH, GNΘ, R CH
CN305 EH 5P

IC111 M5218AFP

C109 22 50V
R112 1k
C110 100p
C111 100p
R115 6.8k
C114 0.47 50V
C112 0.1
C113 1 50V
Q101 2SC4154
R116 1.5k
R114 15k
RV101 50k
R117 33k
R118 470k
R119 100k
R121 1k
RV102 100k
C115 47 16V
C209 47 16V
R221 33k
R222 470k
R223 100k
R224 1k
R226 1.5k
R227 15k
R229 6.8k
C210 0.47 50V
C211 0.1
C212 1 50V
Q201 2SC4154
C213 100p
C214 22 50V
R231 1k
C215 100p
IC111 M5218AFP

IC111 ΘBS AMP

Q101, 201 ACTIVE INΘUCTOR

RV101 LEVEL — ΘYNAMIC BASS SYSTEM — RV102 FREQUENCY

CN307 3P: L CH, GNΘ, R CH

【VOL BOARD】

CN314 3P
C273 10 50V
C173 10 50V
RV361 10k/100k/100k VOLUME
CN315 3P
CN313 3P: L CH, GNΘ, R CH

Q302 2SA1346
R318 220
Q302 LEΘ ΘRIVE
R316 4.7k
R370 1k
C314 0.1
C313 10 50V
IC310 LB1639

IC310 VOLUME MOTOR ΘRIVE

CN310 7P: VR, +5V (US), POWER, +5V (S), SGNΘ, ΘOWN, UP

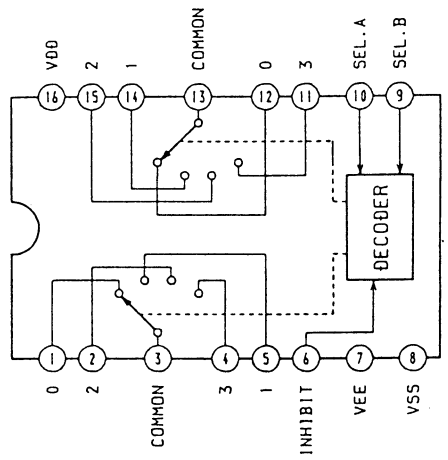
K PANEL BOARD
CN101

(See Page 46)

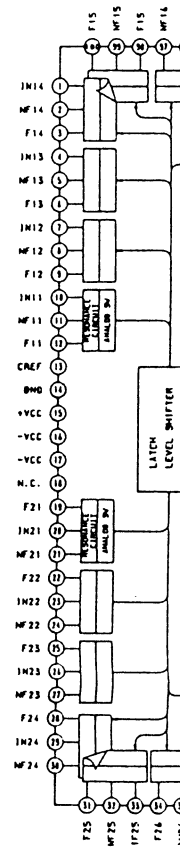
R171 2.7k
R271 2.7k
Q601 2SC2603
R691 1k
C690 22 50V
R690 1k
Q651 2SC2603
R614 1k
MUTE
CNΘ, AEP, R693
SP MOΘEL 100k
G, IT MOΘEL 330K
Q601, 651 MUTING

- IC Block Diagrams

IC121 CD4052BCM

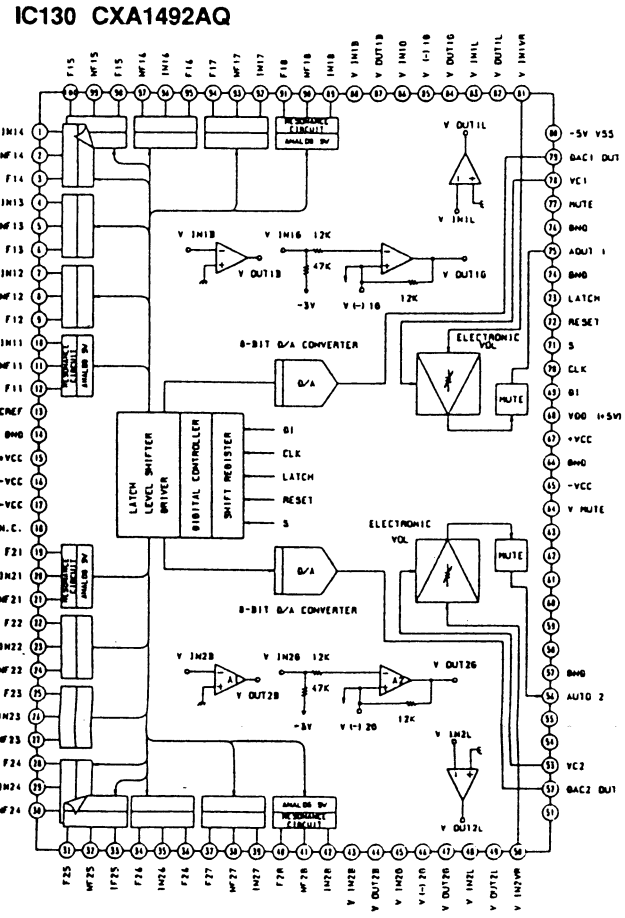


IC130 CXA1

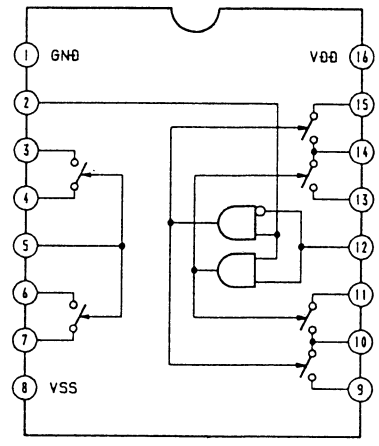


21 22 23 24 25 26 27 28 29 30 31

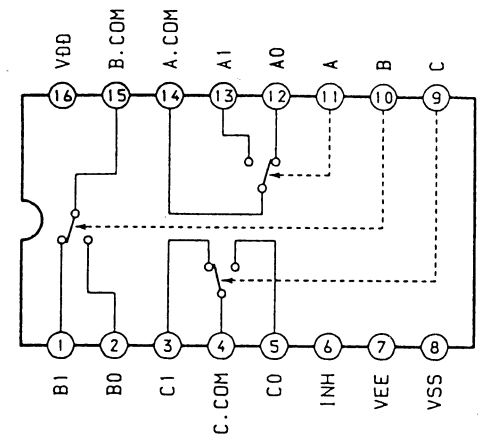
IC130 CXA1492AQ



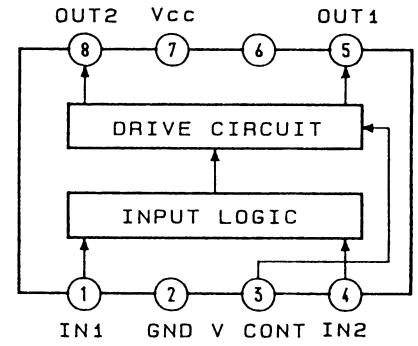
IC133 TC9215F



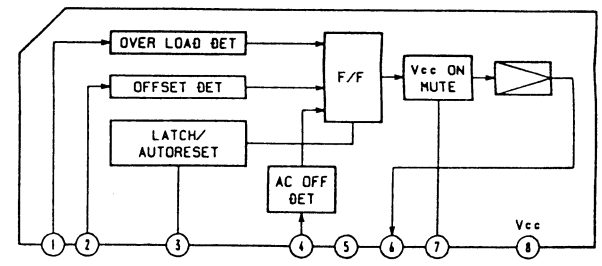
IC191 CD4053BCM



IC310 LB1639

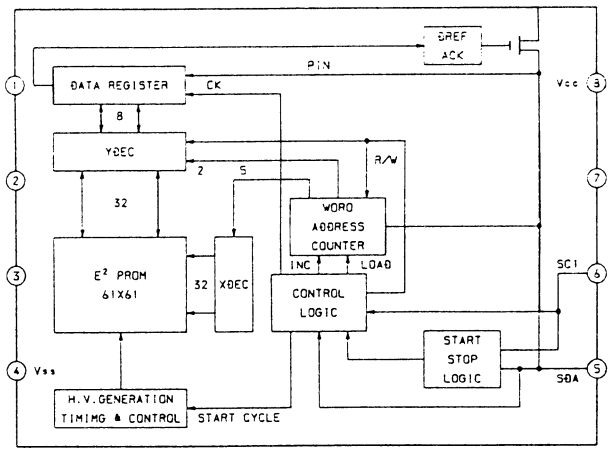


IC701 µPC1237HA

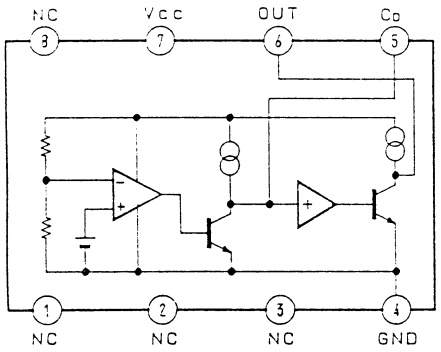


- **IC Block Diagrams**

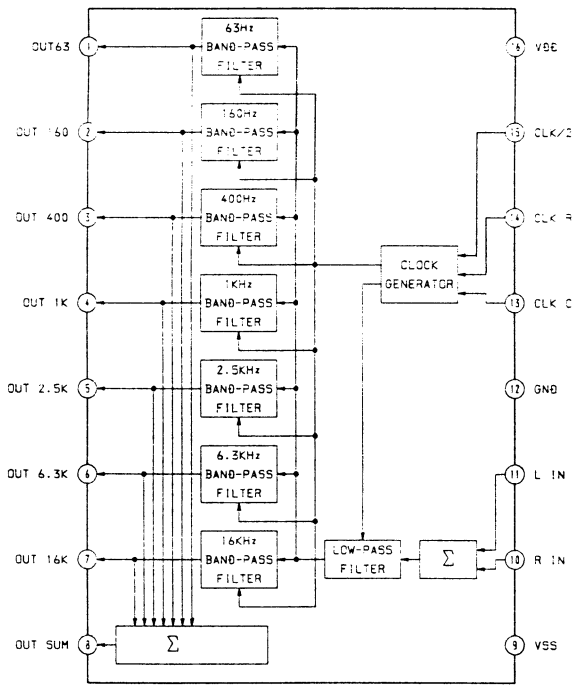
IC302 X24C01S



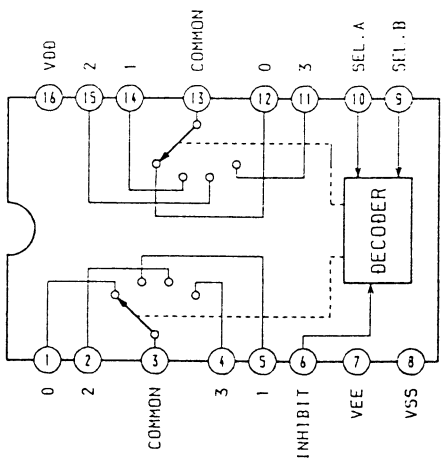
IC304 M51953BFP



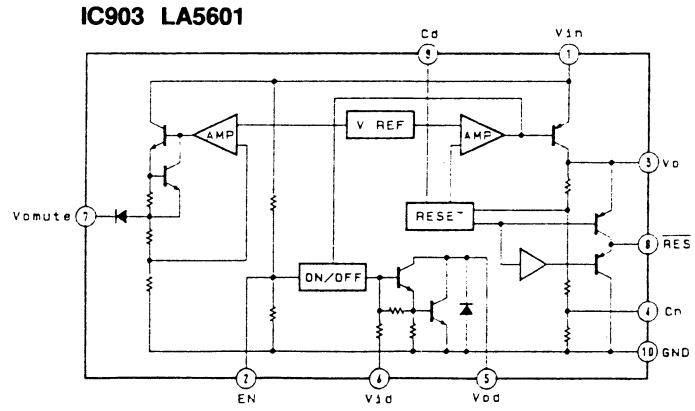
IC305 XR1091DCP



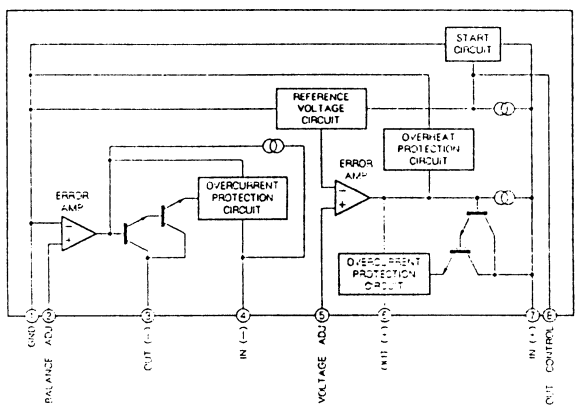
IC306 CD4052BCM



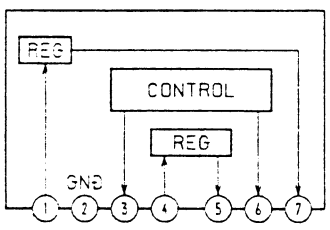
IC903 LA5601



IC902 M5230L

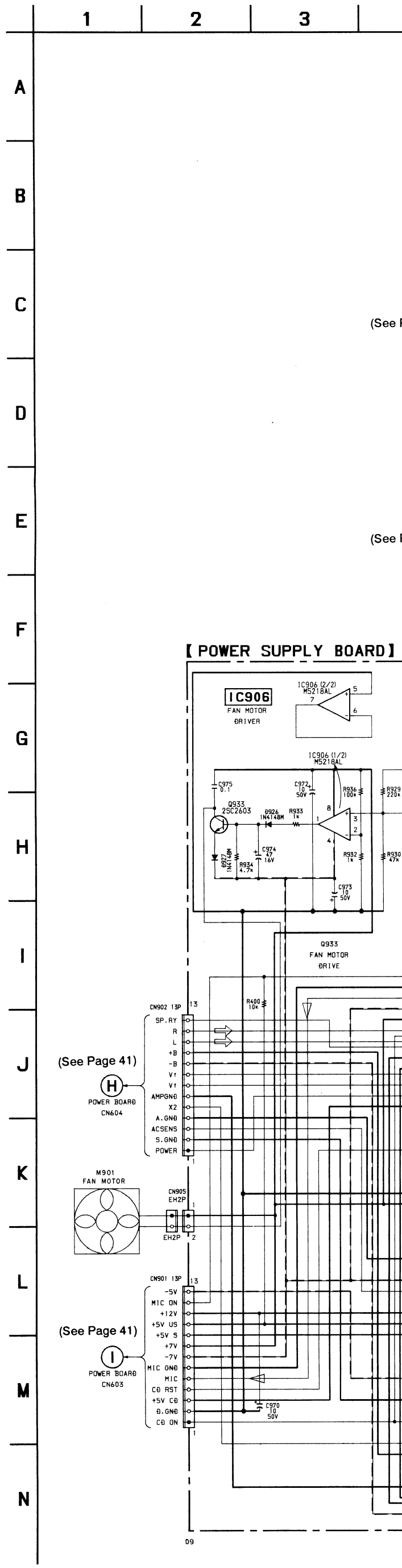


IC905 LA5667



5-10. SCHEMATIC DIAGRAM — PANEL/POWER SUP

- See page 13 for IC Pin Functions. (IC301)



4 5 6 7 8 9 10 11 12 13 14

【PANEL BOARD】

(See Page 39)
F
MAIN BOARD
CN302

CN310 19P
AC SENS
NC
EQ B
EQ A
FUNC B
FUNC A
MUTE
POWER
KEY REQ
D3
D2
D1
D0
Vf
S GND
+5V (S)
+5V US
+33V (US)
Vf
19
1
+7V
-7V
CLOCK
DATA
DATA IN
TUNED
IF OK
STEREO
AM/FM
MONO
AUB
AUB GND
DPCLK
CE
LATCH
FUNC INH
SPEANASIG
CD ON
19
CN311 19P

EQ B
EQ A
FUNC B
FUNC A
KEY REQ
CLOCK
DATA
DATA IN
TUNED
IF OK
STEREO
AM/FM
MONO
DPCLK
CE
FUNC INH
CD ON

R397 22k
R399 100
R371 100
V+
V+
S GND
LATCH
SPEANASIG
R362 10k
R363 47k
D360 MA3056M
C361 100 6.3V
D361 MA3056M
C362 0.001
C360 100 6.3V
-7V
+7V
R360 47
R361 47
R364 1.5k
C312 0.01
D312 1SS352
D311 1SS352
C311 0.01
C350 22000p
C309 0.1
C363 0.1
D302 1SS352
D301 1SS352
D305 1SS352
R372 100
R309 220

IC307
FL DRIVER
IC307
SN755703
DO NC RST NC LATCH NC GND NC Vcc2 NC HV040 HV039 HV038 HV037 HV021 HV022 HV023 HV024 HV025 HV026 HV027 HV028 HV029 HV030 HV031 HV032 HV033 HV034 HV035 HV036
DATA Vcc1 NC CLK NC CL NC NC Vcc2 NC HV001 HV002 HV003 HV004 HV020 HV019 HV018 HV017 HV016 HV015 HV014 HV013 HV012 HV011 HV010 HV009 HV008 HV007 HV006 HV005
DATA
CLOCK
CL
LATCH

FL301
FLUORESCENT INDICATOR TUBE
F2
F2
1G 2G 3G 4G 5G 6G 7G 8G 9G 10G 11G 12G 13G 14G 15G 16G 17G 18G 19G 20G 21G P48 P47 P46 P45 P44 P43 P42
NC P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 P22 P23 P24 P25 P26 P27
C379 0.47

IC304
RESET
IC304
M51953BFP
R391 10k
C390 0.1
D390 1SS352

IC305
BAND-PASS FILTER
(SPECTRUM ANALYZER)
IC305
XR1091DCP
Vdd C/2 CLR CLC GND L R Vss SUM
63 160 400 1K 2.5K 6.3K 16K
C/2 400 1K 2.5K 6.3K 16K

IC306
SWITCHING
IC306
C04052BCM
Vdd YCOM 6.3K XCOM 16K 1K 160 INH VEE Vss
63 400 1K 160 INH

IC311
INVERTER
IC311
TC7SU04F
R365 1k
R366 1k
C393 220p
R329 10k
R310 3.3k

Q301
AU-BUS BUFFER
2SC4398
R307 10k
R306 4.7k
R308 10
R999 100
D303 1SS352
R305 10k
+5V OUT GND
IC303
GP1U90XB

IC303
REMOTE CONTROL RECEIVER

IC301
SYSTEM CONTROL
IC301
#P078012BGC-607-AB8
D0 D1 D2 D3 KEY REQ AU-BUS IN AU-BUS OUT SIRCS Vss (GND) POWER ON/OFF MUTE FUNC A FUNC B EQ A EQ B MONO
AM/FM IF OK STEREO TUNED DATA IN DATA CLOCK Vss (GND) CE LATCH TUNING PRESET FUNC INH CD ON
VOL POSITION SPEANA IN SPEANA IN AN13 AN12 AN11 AN10 AVSS (GND) XT1 XT2 GND X1 X2 Vdd (+5V) DATA CLOCK DPCLK B-UP RST VOL+ VOL-
X301 32.768KHz
X302 8.38MHz
C301 18p
C302 27p
C303 33p
C304 33p
R398 330k
C381 0.01
C382 0.01
R384 330
R383 330
R382 330
R381 330
R387 1k
R388 47k
R389 1k
R385 330
D336 SEL5220S (TUNING)
D337 SEL5220S (PRESET)
R300 100
C300 5.5V
C305 100 6.3V
R301 10k
R302 10k
R303 10k
B-UP
RST
+5V

R395 22k
C391 0.47
D391 1SS352
Q390 2SC4154
BUFFER
R394 22k
C392 1
R311 100k
R312 100k

R313 2.2k
1.1k
9.1k
3.6k
470

SP GND
SP GND

IC903
+5V REG (CD)
IC903
LA5601
C919 0.1 50V
R913 470
C920 100 10V
C921 1 50V
C915 100 25V

IC902
±7V REG CONTROL
IC902
M5230L
R925 1k
Q905 2SC3400
R719 330 2W
CND MODEL
F905 1.25A
ICP905 1.25A
EXCEPT CND MODEL
Q903 2SB1094
Q906 2SA1115
R905 1M
R903 220
C904 3300 16V
R907 560
C937 0.1
R906 560
R908 7.5k
R909 7.5k
R910 10k
C911 2.2 50V
C912 1000 10V
R911 3.3k
C913 1000 10V
C910 10 50V
F906 1.25A
ICP906 1.25A
Q904 2SD2012
-7V REG
C907 1 50V
R904 220
C905 3300 16V

Q905
Q903, 906 POWER
+7V REG ON/OFF
SWITCH

*1
2.5A 125V CND MODEL
T2.5AL 250V EXCEPT CND MODEL

F903 *1
F904 *1

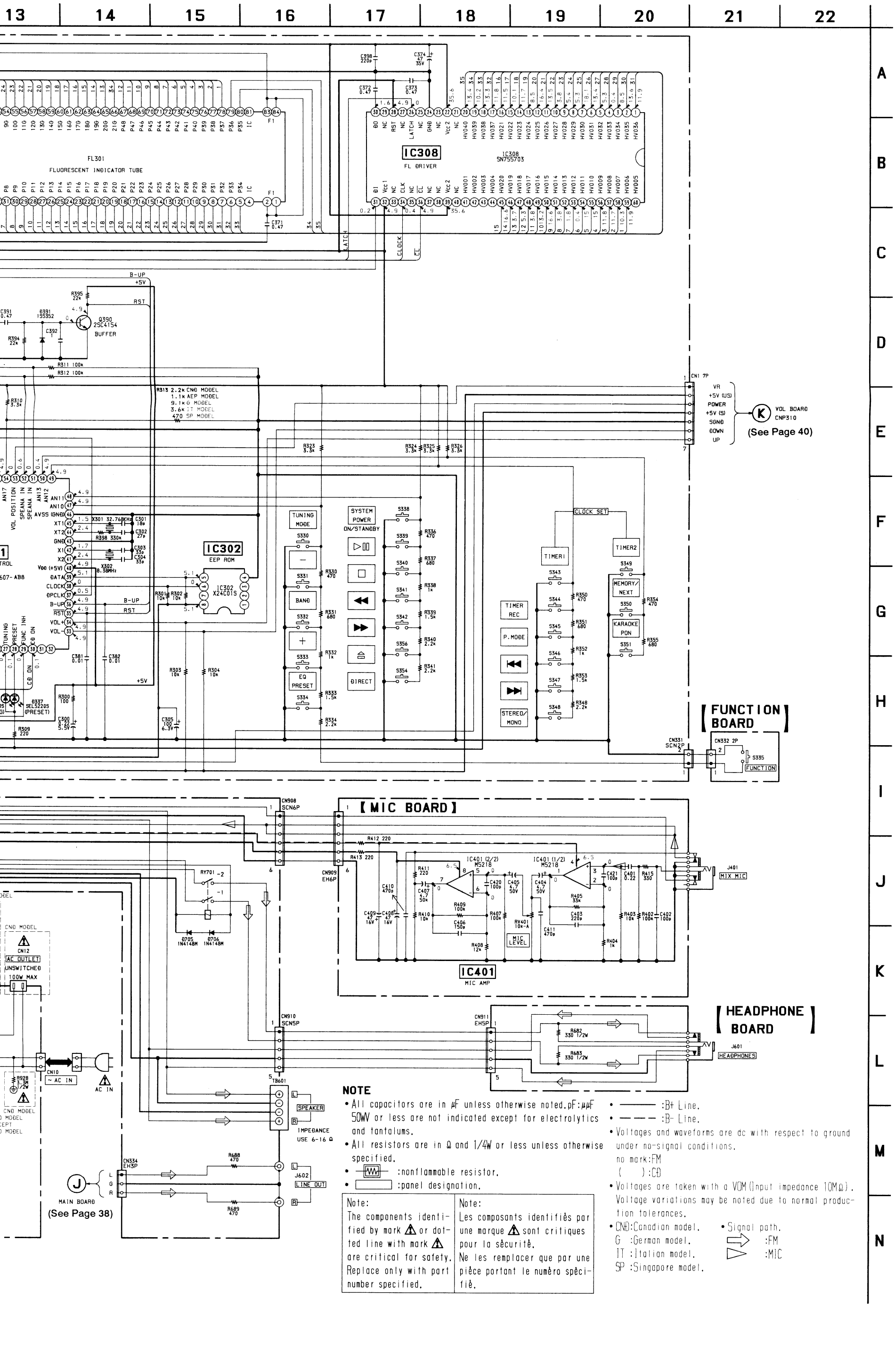
IC904
+20V REG
IC904 TA7820S
R714 470
C903 0.01 100V
D904 11ES2
D903 11ES2
D902 11ES2
D901 11ES2
C906 0.01 100V
C936 0.1

IC905
REG
IC905
LA5667
Q921 2SB1116A
R927 1k
R923 4.7k
R922 4.7k
R931 33k
R920 27k
C935 0.1
C928 10 50V
C927 10 50V
C925 0.47 50V
C924 10 50V
D922 11ES2
C923 100 25V
C922 100 25V
D923 11ES2
D900 RBV-402
C900 0.01 100V
C909 0.01 100V
C901 4700 35V
C902 4700 35V

Q916 2SB1616
R916 2.2k
C918 47 16V
D916 UZL-6M2
C917 10 50V
D925 UZL-6L1
C930 47 16V
EXCEPT CND MODEL
Q931 2SC3399
Q932 2SC3400
R926 1k
Q916 +5V REG
Q931, 932 CD ON/OFF SWITCHING
Q921 B+ SWITCH

CN317 EH2P
MAIN BLOCK
CN316
G
(See Page 39)

【TRANSFORMER BOARD】
AEP, G, IT, SP MODEL
CNJ100
AC OUTLET
UNSWITCHED
100W MAX
CN12
AC OUTLET
UNSWITCHED
100W MAX
CND MODEL
CN11
CN903 EH8P
CN900 EH8P
NOT REPLACEABLE:
BUILT IN TRANSFORMER.
T900
POWER TRANSFORMER
F901
2A 125V
T1AL 250V
CND MODEL
EXCEPT CND MODEL
R928 3.3M 1/2W
CND MODEL
CN10
~ AC IN
AC IN
CN334 EH3P
J
L
G
R
MAIN BOARD
(See Page 38)



NOTE

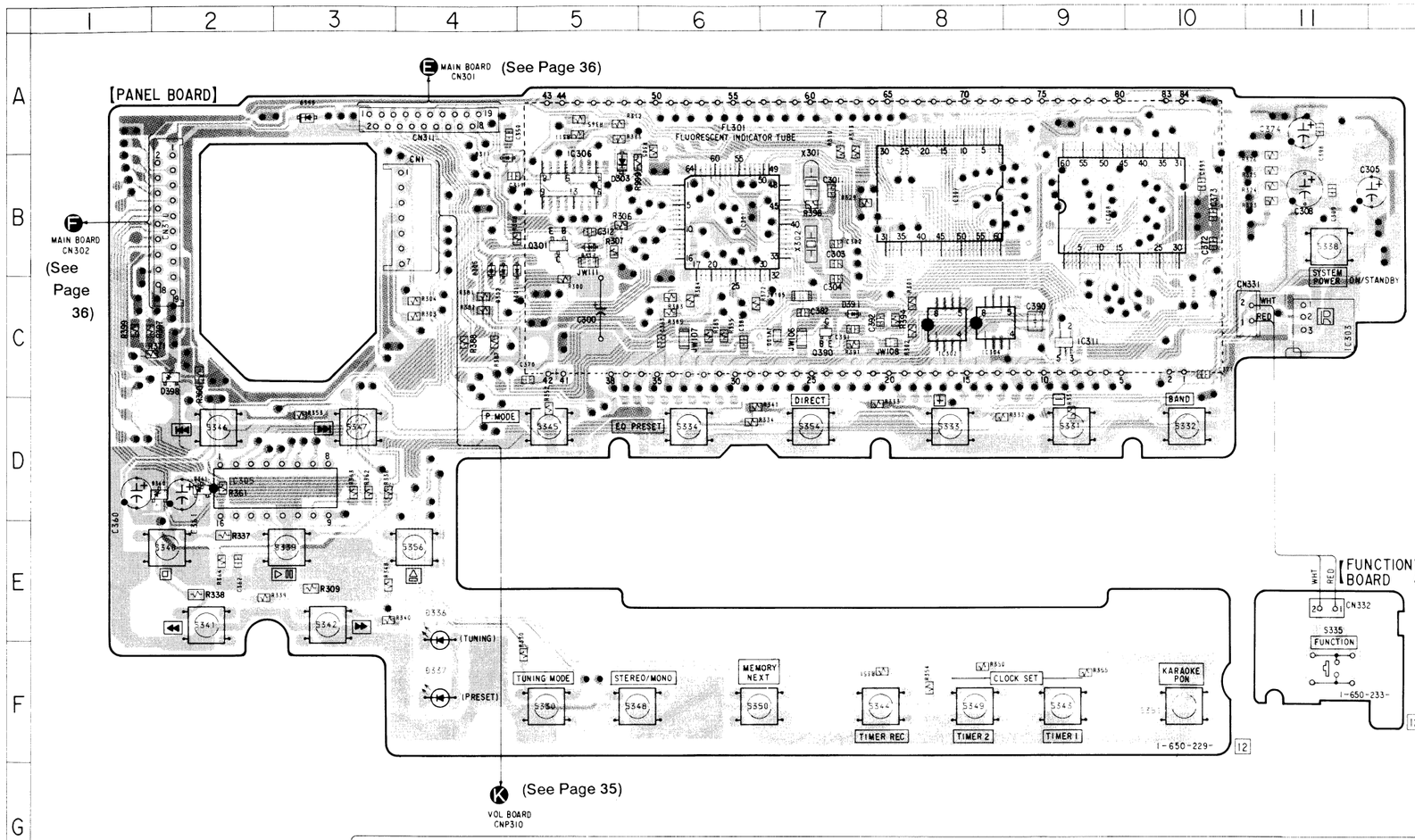
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▭ :nonflammable resistor.
- ▭ :panel designation.

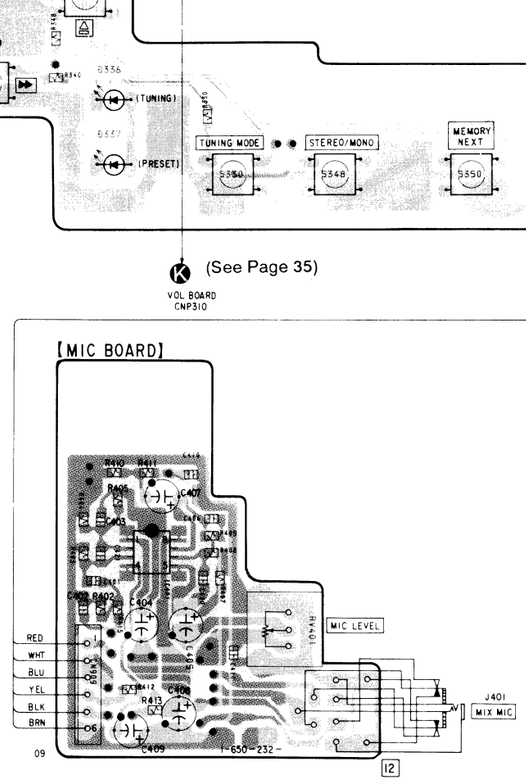
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

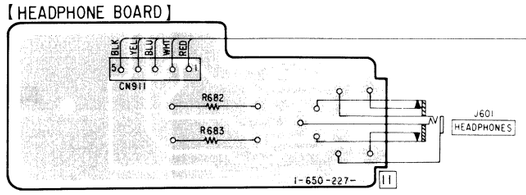
- ——— :B+ Line.
- — — — :B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:FM
  ( ):CD
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- CND:Canadian model.
  G :German model.
  IT :Italian model.
  SP :Singapore model.
- Signal path.
  ⇨ :FM
  ▷ :MIC

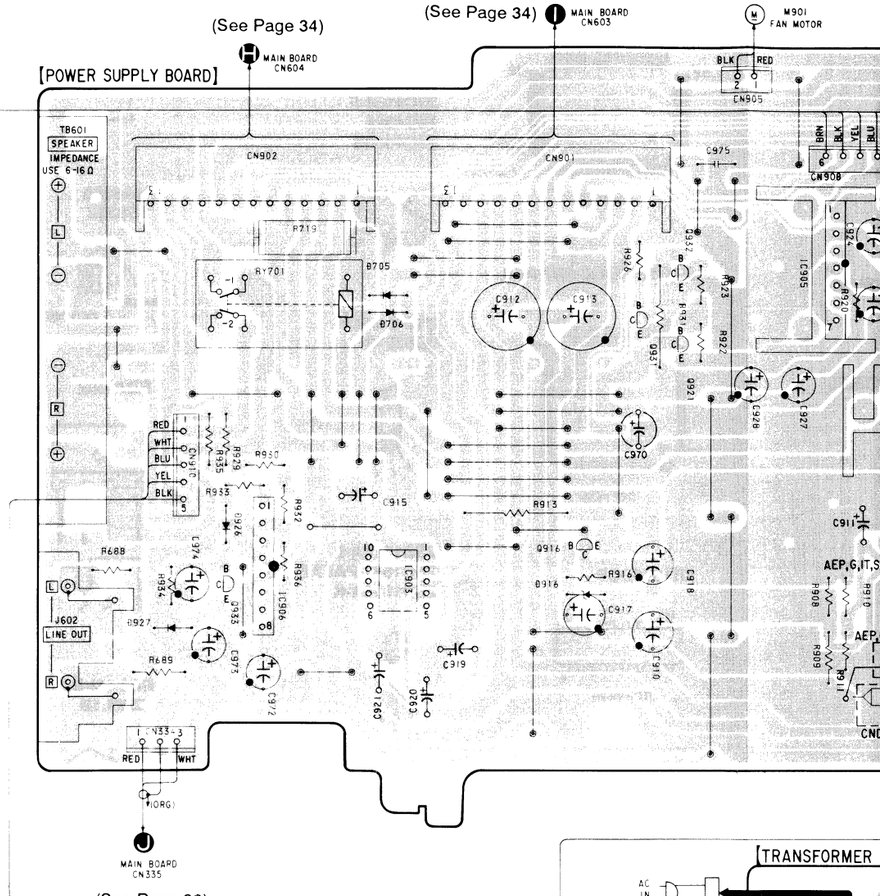
5-11. PRINTED WIRING BOARDS — PANEL/POWER SUPPLY SECTION —

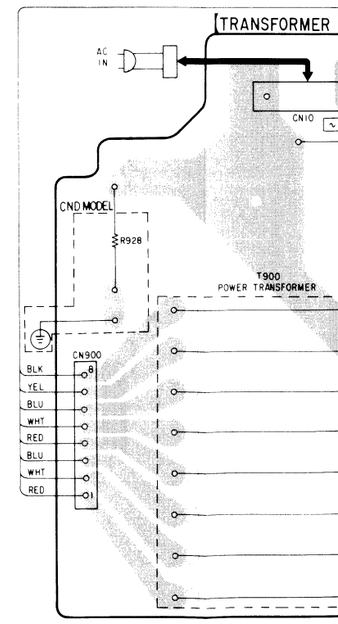
- **See page 11 for Circuit Boards Location.**
- **See page 50 for Semiconductor Lead Layouts.**





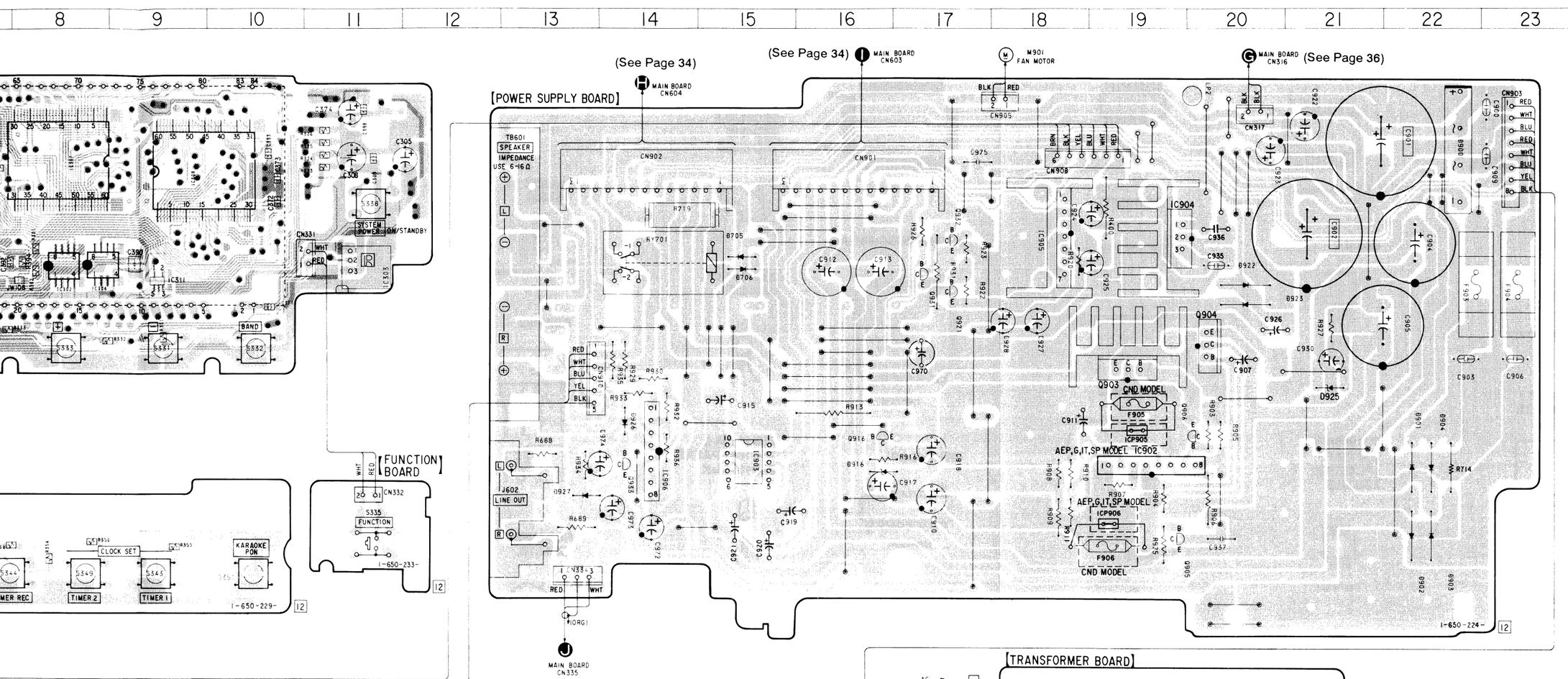






Note:

- ○——○ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- Pattern from the side which enable seeing.
- Pattern of the rear side.
- CND : Canadian model.
- G : German model.
- IT : Italian model.
- SP : Singapore model.



Note:

- ⟜ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- : Pattern from the side which enable seeing.
- : Pattern of the rear side
- CND : Canadian model.
- G : German model.
- IT : Italian model.
- SP : Singapore model.

- **Semiconductor Location**

Ref. No.	Location
D301	C-4
D302	C-4
D303	B-5
D305	B-4
D311	B-4
D312	B-5
D336	E-4
D337	F-4
D360	D-1
D361	D-2
D390	A-3
D391	C-7
D398	D-1
D399	A-11
D705	C-15
D706	C-15
D900	B-22
D901	E-22
D902	F-22
D903	F-22
D904	E-22
D916	E-16
D922	C-20
D923	C-21
D925	D-21
D926	E-14
D927	E-13
IC301	B-6
IC302	C-8
IC303	C-11
IC304	C-8
IC305	D-2
IC306	B-5
IC307	B-8
IC308	B-9
IC311	C-9
IC401	I-4
IC902	E-19
IC903	E-15
IC904	B-19
IC905	C-18
IC906	E-14
Q301	B-5
Q390	C-7
Q903	D-19
Q904	C-20
Q905	F-19
Q906	D-19
Q916	E-16
Q921	C-17
Q931	C-17
Q932	B-17
Q933	E-14

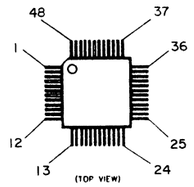
5-12. SEMICONDUCTOR LEAD LAYOUTS

BA3308

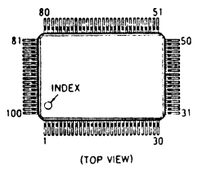
CD4052BCM
CD4053BCM
TC9215F

CD4066BCM

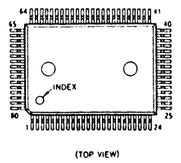
CXA1372AQ



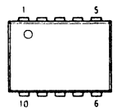
CXA1492AQ



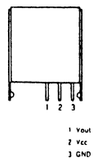
CXD2500BQ



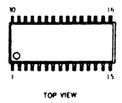
LA5601



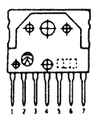
GP1F32T
GP1U90XB



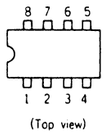
LA1851NM
LA6525M



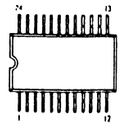
LA5667
M5218AL



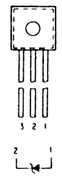
LB1639



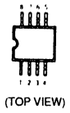
LC7218M
MSM6538-01GS-VKR1



LM35DZ

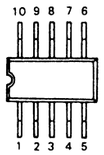


M51953BFP
M5218AFP
µPC4558G2
X24C01S

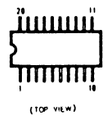


M5218AL
M5230L-A
µPC1237HA

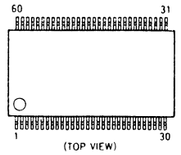
M54641FP



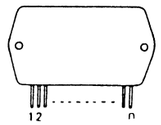
PCM-67U-B



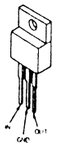
SN755703FT



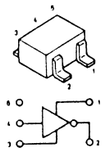
STK4132MK2



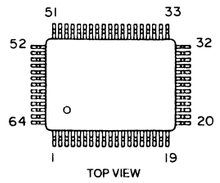
TA7820S



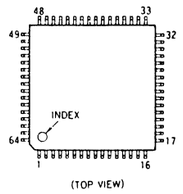
TC7SU04F



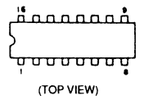
µPD75116GF-J06-3BE



µPD78012BGC-607-AB8



XR1091DCP



DTA124ES
DTC114ES
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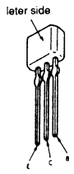
DTC144ES
2SC2603-EF

2SA1175-HFE



2SA1342
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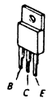
2SC3395
2SC3396
2SC4154-F
2SC4398
2SC4666B

2SB1094-LK
2SD2012



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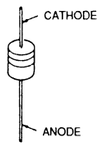
2SD1616A-K

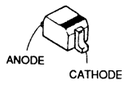
2SK208-GR3

HZS6A1L
11ES2
UZL-33H

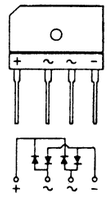


MA8039

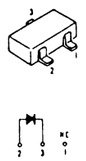
MA8056
1SS352



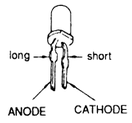
RBA-402



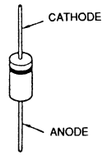
RD5.6M-B2
UZM5.1B



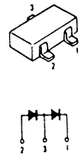
SEL5220S



UZL-6M2
1N4148M

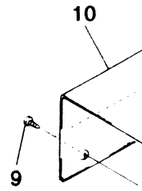


1SS226



NOTE:
• Items mar
are seldom
delay sho
these items
• -XX, -X m
have some

6-1. CAS

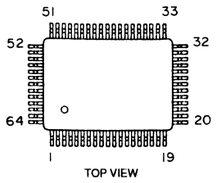


4

3

Supplied

µPD75116GF-J06-3BE



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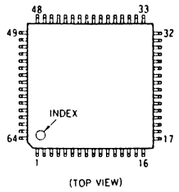
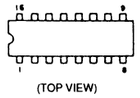


XR1091DCP



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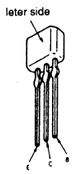
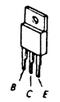
DTC114ES
DTC124ES
DTC144ES
2SC2603-EF

2SA1175-HFE

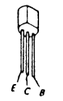


2SA1342
2SA1678
2SC2814-F4
2SC3395
2SC3396
2SC4154-F
2SC4398
2SC4666B

2SB1094-LK
2SD2012

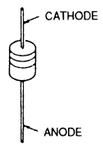


2SB1116A-L
2SC1841-PAFAEA
2SD1616A-K



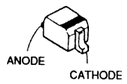
2SK208-GR3

HZS6A1L
11ES2
UZL-33H

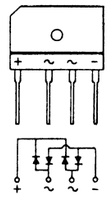


MA8039

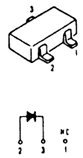
MA8056
1SS352



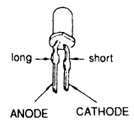
RBA-402



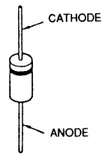
RD5.6M-B2
UZM5.1B



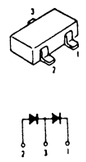
SEL5220S



UZL-6M2
1N4148M



1SS226

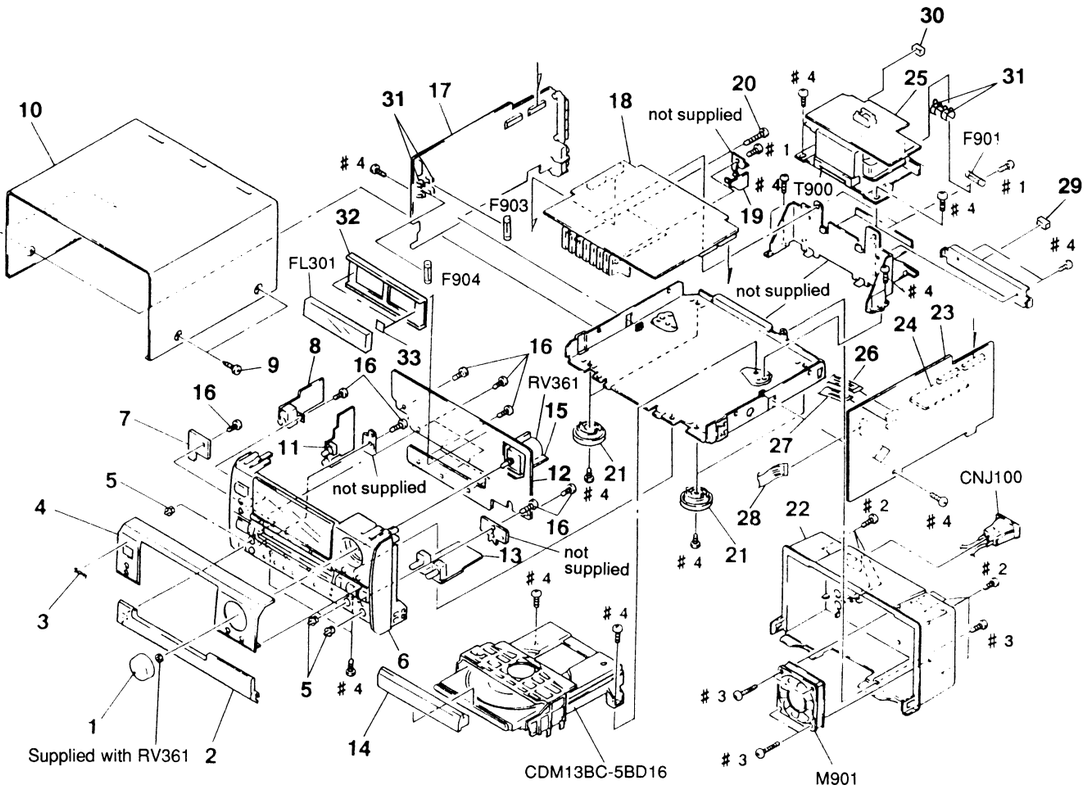


SECTION 6
EXPLODED VIEWS

NOTE:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- CND : Canadian model
- G : German model
- IT : Italian model
- SP : Singapore model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. CASE AND CHASSIS SECTION

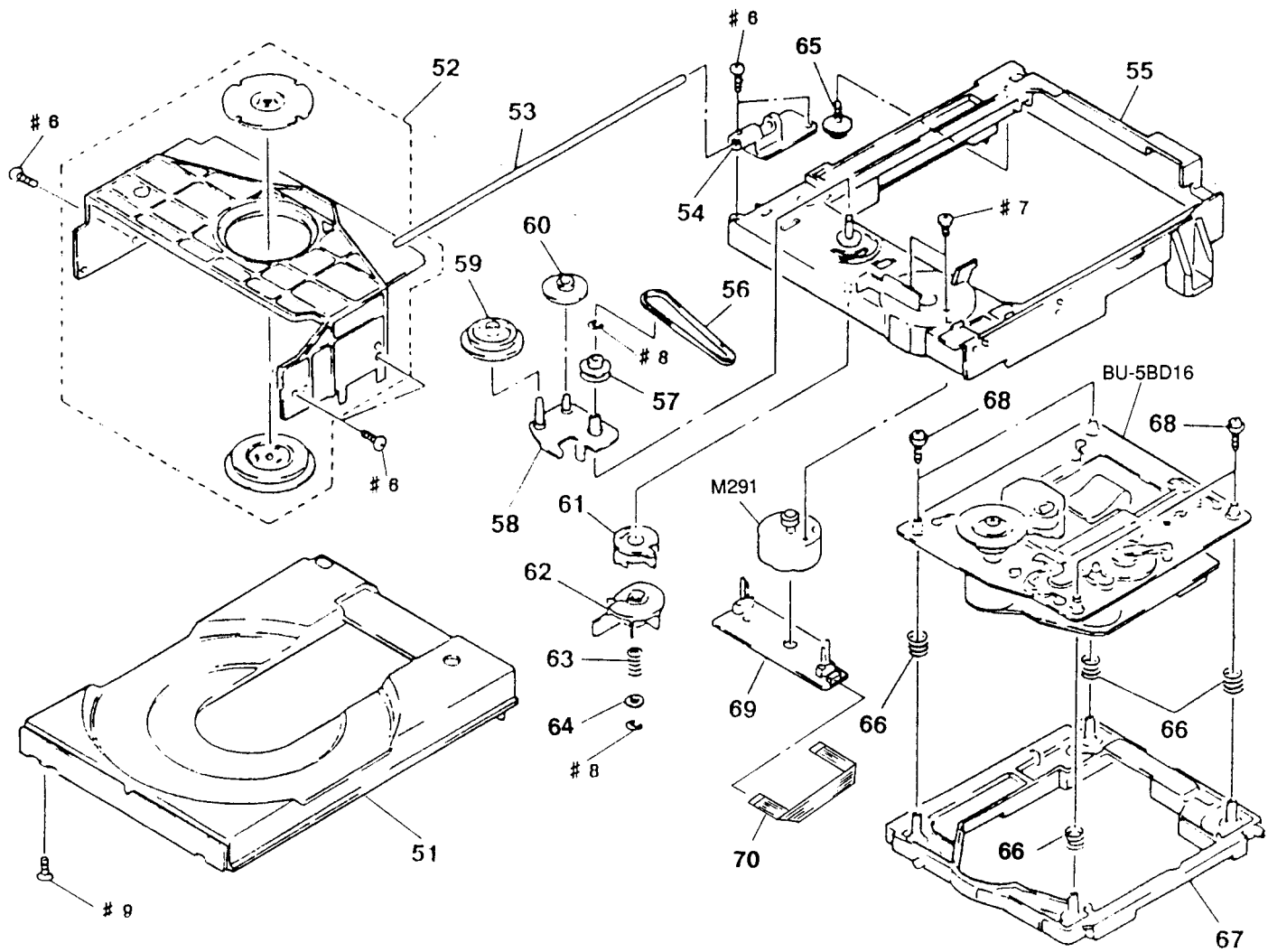


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

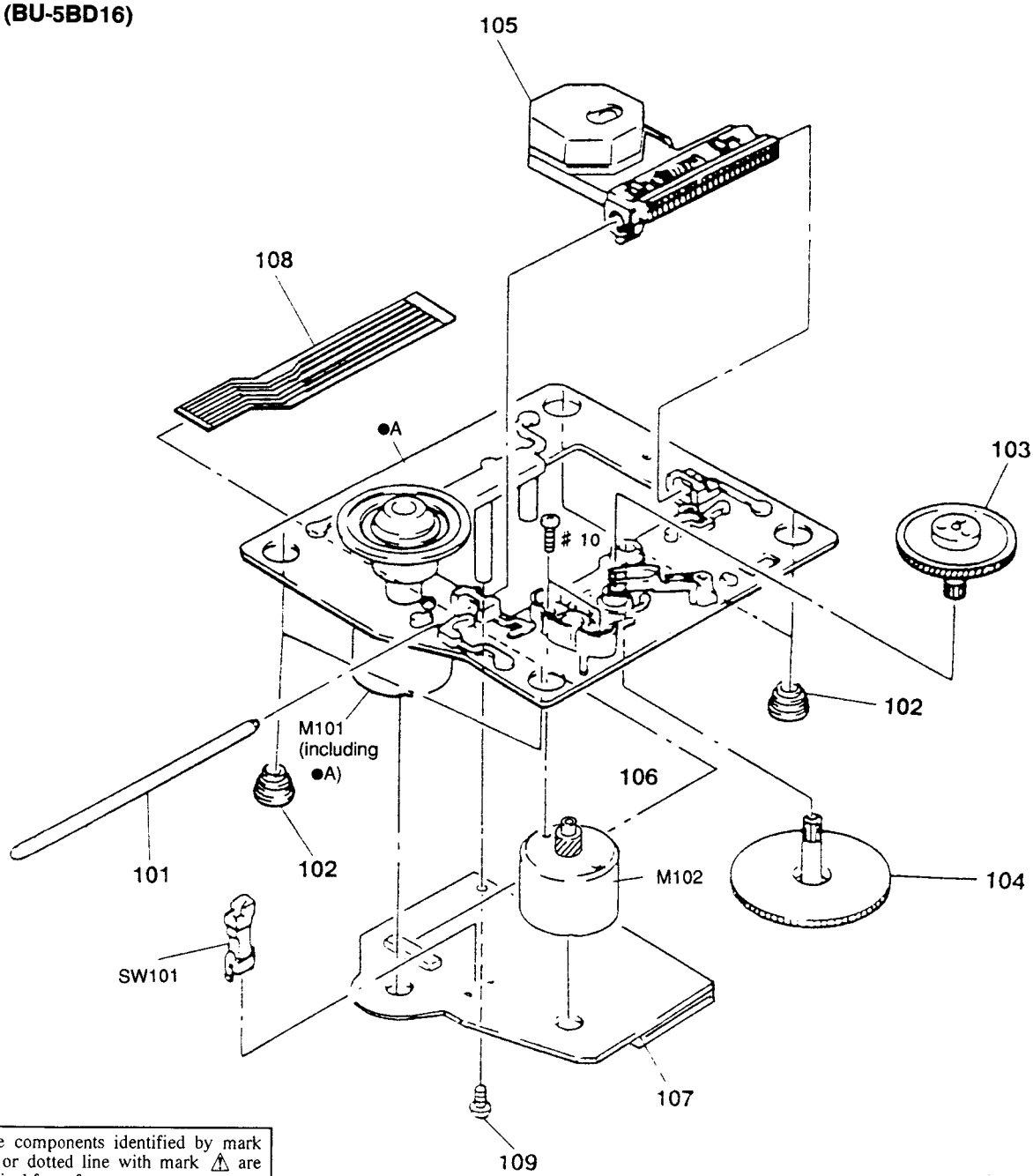
Ref. No.	Part No.	Description	Remark
1	X-4944-186-1	KNOB (VOL) ASSY	
2	X-4944-212-1	LID ASSY (CND, AEP, IT, SP)	
2	X-4944-914-1	LID ASSY (G)	
3	4-942-636-01	EMBLEM (NO. 3.5), SONY	
4	4-962-507-01	PANEL, FRONT (CND, AEP, IT, SP)	
4	4-962-507-11	PANEL, FRONT (G)	
5	3-373-202-01	KNOB (H.P.)	
6	X-4944-185-1	PANEL ASSY, FRONT	
* 7	1-650-233-12	FUNCTION BOARD	
* 8	1-650-227-11	HEADPHONE BOARD	
9	3-363-099-01	SCREW (CASE 3 TP2)	
* 10	4-951-094-41	CASE	
* 11	A-4369-723-A	MIC BOARD, COMPLETE (G, IT)	
* 11	A-4365-626-A	MIC BOARD, COMPLETE (CND, AEP, SP)	
* 12	A-4369-710-A	PANEL BOARD, COMPLETE (CND)	
* 12	A-4369-713-A	PANEL BOARD, COMPLETE (AEP)	
* 12	A-4369-715-A	PANEL BOARD, COMPLETE (SP)	
* 12	A-4369-724-A	PANEL BOARD, COMPLETE (IT)	
* 12	A-4369-725-A	PANEL BOARD, COMPLETE (G)	
* 13	1-650-231-12	DBS BOARD	
14	4-962-504-01	PANEL, LOADING	
* 15	1-650-228-11	VOL BOARD	
16	4-951-620-01	SCREW (2.6X8), +BVTP	
* 17	A-4369-719-A	POWER SUPPLY BOARD, COMPLETE (G, IT)	
* 17	A-4365-614-A	POWER SUPPLY BOARD, COMPLETE (CND, AEP, SP)	
* 18	A-4369-717-A	POWER BOARD, COMPLETE (AEP, G, IT)	
* 18	A-4365-612-A	POWER BOARD, COMPLETE (CND, SP)	
* 19	1-650-684-11	SENSOR BOARD	
20	4-928-635-11	SCREW, +BV (2.6X16) TAPPING	
21	X-4944-053-1	FOOT (DIA. 42) ASSY	
* 22	4-962-502-01	PANEL, BACK (CND)	
* 22	4-962-502-11	PANEL, BACK (AEP, G, IT, SP)	
* 23	A-4369-711-A	MAIN BOARD, COMPLETE (CND)	
* 23	A-4369-714-A	MAIN BOARD, COMPLETE (AEP)	
* 23	A-4369-716-A	MAIN BOARD, COMPLETE (SP)	
* 23	A-4369-721-A	MAIN BOARD, COMPLETE (G, IT)	
24	A-4303-459-A	TCB BOARD, COMPLETE (AEP)	
24	A-4303-462-A	TCB BOARD, COMPLETE (CND)	
24	A-4303-461-A	TCB BOARD, COMPLETE (SP)	
24	A-4303-460-A	TCB BOARD, COMPLETE (G, IT)	
* 25	1-650-225-12	TRANSFORMER BOARD	
26	1-765-075-11	WIRE (FLAT TYPE) (19 CORE)	
27	1-590-906-11	WIRE (FLAT TYPE) (19 CORE)	
28	1-690-422-11	WIRE, FLAT TYPE (19 CORE) (AEP)	
29	3-343-272-01	CUSHION (K)	
30	9-911-841-XX	CUSHION	
31	1-533-293-11	FUSE HOLDER	
* 32	4-944-202-01	HOLDER (FL)	
* 33	4-921-941-01	CUSHION (FL)	
⚠CNJ100	1-526-794-11	OUTLET, AC (AEP, G, IT)	
⚠F901	1-532-078-00	FUSE, TIME-LAG 1.0A (AEP, G, IT, SP)	
⚠F901	1-532-743-11	FUSE, GLASS TUBE 2A (CND)	
⚠F903	1-532-286-00	FUSE, TIME-LAG 2.5A (AEP, G, IT, SP)	
⚠F903	1-532-744-11	FUSE, GLASS TUBE 2.5A (CND)	
⚠F904	1-532-286-00	FUSE, TIME-LAG 2.5A (AEP, G, IT, SP)	
⚠F904	1-532-744-11	FUSE, GLASS TUBE 2.5A (CND)	
FL301	1-519-730-11	INDICATOR TUBE, FLUORESCENT	
M901	1-698-316-11	MOTOR, DC FAN	
⚠T900	1-426-838-11	TRANSFORMER, POWER (CND)	
⚠T900	1-426-839-11	TRANSFORMER, POWER (AEP, G, IT, SP)	

6-2. CD MECHANISM SECTION (CDM13BC-5BD16)



Ref. No.	Part No.	Description	Remark
51	4-944-012-21	TABLE, DISC	
52	A-4604-752-A	HOLDER (MG) ASSY	
53	4-929-764-01	SHAFT (TABLE GUIDE)	
54	4-944-006-11	BEARING	
55	X-4941-462-1	CHASSIS (MD) ASSY	
56	4-927-649-01	BELT	
57	4-929-724-01	PULLEY (B)	
58	X-4929-703-1	ARM ASSY, SWING	
59	4-927-620-01	GEAR (P)	
60	4-927-628-01	GEAR (C)	
61	4-929-727-01	CAM (A)	
62	4-929-729-01	CAM (B)	
63	3-659-338-00	SPRING, COMPRESSION	
64	4-927-654-01	WASHER (LIMITER)	
* 65	4-917-583-21	BRACKET, YOKE	
66	4-958-593-01	SPRING (BU), COMPRESSION	
67	4-929-747-01	HOLDER (BU)	
68	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 69	1-638-308-11	LOADING BOARD	
70	1-590-530-11	WIRE, FLAT TYPE	
M291	A-4608-362-A	MOTOR (L) ASSY (LOADING)	

6-3. BASE UNIT SECTION (BU-5BD16)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	4-917-565-01	SHAFT, SLED	
102	4-951-940-01	INSULATOR (BU)	
103	4-917-567-01	GEAR (M)	
104	4-917-564-01	GEAR (P), FLATNESS	
⚠105	8-848-281-11	OPTICAL PICK-UP BLOCK (KSS-390A)	
* 107	A-4649-969-A	BD BOARD, COMPLETE	
108	1-647-341-11	FLEXIBLE BOARD	
109	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
SW101	1-572-085-11	SWITCH, LEAF (LIMIT)	

BD

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- CND : Canadian model
- G : German model
- IT : Italian model
- SP : Singapore model

Ref.No.	Part No.	Description			Remark
*	A-4649-969-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C102	1-163-989-11	CERAMIC CHIP	0.033uF 10%	25V	
C103	1-135-157-21	TANTALUM CHIP	10uF 20%	6.3V	
C104	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C105	1-126-607-11	ELECT CHIP	47uF 20%	4V	
C106	1-126-607-11	ELECT CHIP	47uF 20%	4V	
C107	1-126-607-11	ELECT CHIP	47uF 20%	4V	
C108	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C109	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C110	1-163-989-11	CERAMIC CHIP	0.033uF 10%	25V	
C111	1-164-346-11	CERAMIC CHIP	1uF	16V	
C112	1-164-004-11	CERAMIC CHIP	0.1uF 10%	25V	
C113	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
C114	1-164-695-11	CERAMIC CHIP	0.0022uF 5%	50V	
C115	1-164-695-11	CERAMIC CHIP	0.0022uF 5%	50V	
C117	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C118	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C119	1-164-695-11	CERAMIC CHIP	0.0022uF 5%	50V	
C120	1-163-989-11	CERAMIC CHIP	0.033uF 10%	25V	
C151	1-163-019-00	CERAMIC CHIP	0.0068uF 10%	50V	
C152	1-164-346-11	CERAMIC CHIP	1uF	16V	
C153	1-163-135-00	CERAMIC CHIP	560PF 5%	50V	
C154	1-164-695-11	CERAMIC CHIP	0.0022uF 5%	50V	
C155	1-163-023-00	CERAMIC CHIP	0.015uF 5%	50V	
C171	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C172	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C173	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C174	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C201	1-163-809-11	CERAMIC CHIP	0.047uF 10%	25V	
C202	1-163-145-00	CERAMIC CHIP	0.0015uF 5%	50V	
C203	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
C204	1-164-005-11	CERAMIC CHIP	0.47uF	25V	
C205	1-164-346-11	CERAMIC CHIP	1uF	16V	
C206	1-163-093-00	CERAMIC CHIP	10PF 5%	50V	
C207	1-163-093-00	CERAMIC CHIP	10PF 5%	50V	
C208	1-164-346-11	CERAMIC CHIP	1uF	16V	
C209	1-164-346-11	CERAMIC CHIP	1uF	16V	
C210	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C299	1-164-346-11	CERAMIC CHIP	1uF	16V	
C301	1-164-346-11	CERAMIC CHIP	1uF	16V	
C302	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C303	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C304	1-164-505-11	CERAMIC CHIP	2.2uF	16V	
C305	1-163-038-11	CERAMIC CHIP	0.1uF	25V	
C306	1-163-145-00	CERAMIC CHIP	0.0015uF 5%	50V	
C307	1-163-145-00	CERAMIC CHIP	0.0015uF 5%	50V	
C308	1-164-346-11	CERAMIC CHIP	1uF	16V	
C309	1-164-346-11	CERAMIC CHIP	1uF	16V	
C310	1-163-125-00	CERAMIC CHIP	220PF 5%	50V	
C311	1-163-125-00	CERAMIC CHIP	220PF 5%	50V	
C312	1-164-346-11	CERAMIC CHIP	1uF	16V	
C313	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
C401	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
		< CONNECTOR >			
CN101	1-580-858-11	SOCKET, CONNECTOR (SMT)	5P		
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT)	12P		
CN103	1-580-872-41	SOCKET, CONNECTOR (SMT)	19P		
		< DIODE >			
D101	8-719-422-12	DIODE	MA8039		
D201	8-719-016-74	DIODE	1SS352		
		< IC >			
IC101	8-752-058-77	IC	CXA1372AQ		
IC102	8-759-823-48	IC	LA6525M		
IC103	8-759-636-20	IC	M54641FP-TP		
IC201	8-752-351-78	IC	CXD2500BQ		
IC202	8-759-248-71	IC	uPD75116GF-J06-3BE		
IC203	8-759-098-27	IC	MSM6538-01GS-VKR1		
IC301	8-759-155-52	IC	PCM-67U-B		
IC302	8-759-100-96	IC	UPC4558G2		
		< JUMPER RESISTOR >			
JW201	1-216-296-00	METAL CHIP	0	5% 1/8W	
JW203	1-216-296-00	METAL CHIP	0	5% 1/8W	
JW205	1-216-295-00	METAL CHIP	0	5% 1/10W	
JW206	1-216-296-00	METAL CHIP	0	5% 1/8W	
JW207	1-216-296-00	METAL CHIP	0	5% 1/8W	
JW208	1-216-295-00	METAL CHIP	0	5% 1/10W	
JW209	1-216-296-00	METAL CHIP	0	5% 1/8W	

BD DBS

Ref.No.	Part No.	Description				Remark
JW210	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW211	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW212	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW215	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< TRANSISTOR >				
Q101	8-729-805-45	TRANSISTOR	2SC3395			
Q201	8-729-602-21	TRANSISTOR	2SC4154-F			
		< RESISTOR >				
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W	
R108	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R114	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R157	1-236-427-11	NETWORK, RES	18K			
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-001-00	METAL CHIP	10	5%	1/10W	
R172	1-216-001-00	METAL CHIP	10	5%	1/10W	
R173	1-216-001-00	METAL CHIP	10	5%	1/10W	
R174	1-216-001-00	METAL CHIP	10	5%	1/10W	
R201	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R202	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R203	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R205	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R208	1-216-033-00	METAL CHIP	220	5%	1/10W	
R209	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R212	1-239-039-11	RESISTOR, NETWORK (1608)	22K			
R214	1-239-039-11	RESISTOR, NETWORK (1608)	22K			
R218	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R219	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R220	1-216-001-00	METAL CHIP	10	5%	1/10W	
R222	1-236-427-11	NETWORK, RES	18K			
R223	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R224	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R225	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R226	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R230	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R231	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R232	1-216-041-00	METAL CHIP	470	5%	1/10W	
R233	1-216-041-00	METAL CHIP	470	5%	1/10W	
R234	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R235	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R236	1-236-413-11	NETWORK, RES	1.2K			
R301	1-236-413-11	NETWORK, RES	1.2K			
R303	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R304	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R305	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R306	1-216-097-00	METAL CHIP	100K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV101	1-241-395-11	RES, ADJ, METAL GLAZE	10K			
RV102	1-241-395-11	RES, ADJ, METAL GLAZE	10K			
		< SWITCH >				
SW101	1-572-085-11	SWITCH, LEAF (LIMIT)				
		< VIBRATOR >				
X201	1-567-908-11	VIBRATOR, CRYSTAL (16MHz)				
X202	1-579-216-11	VIBRATOR, CERAMIC (4MHz)				
**********						
*	1-650-231-12	DBS BOARD				
		*********				
		< CAPACITOR >				
C109	1-124-916-11	ELECT	22uF	20%	63V	
C110	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C111	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C112	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C113	1-126-160-11	ELECT	1uF	20%	50V	
C114	1-124-465-00	ELECT	0.47uF	20%	50V	
C115	1-124-589-11	ELECT	47uF	20%	16V	
C209	1-124-589-11	ELECT	47uF	20%	16V	
C210	1-124-465-00	ELECT	0.47uF	20%	50V	
C211	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C212	1-126-160-11	ELECT	1uF	20%	50V	
C213	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C214	1-124-916-11	ELECT	22uF	20%	63V	
C215	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
		< CONNECTOR >				
* CN305	1-564-508-11	PLUG, CONNECTOR	5P			
* CN307	1-564-506-11	PLUG, CONNECTOR	3P			

DBS | FUNCTION | HEADPHONE | LOADING | MAIN

Ref.No.	Part No.	Description				Remark
		< IC >				
IC111	8-759-636-55	IC M5218AFP				
		< TRANSISTOR >				
Q101	8-729-602-21	TRANSISTOR 2SC4154-F				
Q201	8-729-602-21	TRANSISTOR 2SC4154-F				
		< RESISTOR >				
R112	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R114	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R115	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R116	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R117	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R118	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R119	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R121	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R221	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R222	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R223	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R224	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R226	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R227	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R229	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R231	1-216-049-00	METAL CHIP	1K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV101	1-223-564-11	RES, VAR, CARBON 50K/50K				
RV102	1-223-562-11	RES, VAR, CARBON 100K/100K				
**********						
*	1-650-233-12	FUNCTION BOARD				
		**********				
		< SWITCH >				
S335	1-554-303-21	SWITCH, TACTILE (FUNCTION)				
**********						
*	1-650-227-11	HEADPHONE BOARD				
		**********				
		< CONNECTOR >				
* CN911	1-564-520-11	PLUG, CONNECTOR 5P				
		< JACK >				
J601	1-750-032-21	JACK (DIA. 3.5) (HEADPHONES)				

Ref.No.	Part No.	Description				Remark
		< RESISTOR >				
R682	1-247-745-11	CARBON	330	5%	1/2W	
R683	1-247-745-11	CARBON	330	5%	1/2W	
**********						
*	1-638-308-11	LOADING BOARD				
		**********				
		< CONNECTOR >				
CN201	1-580-918-11	HOUSING, CONNECTOR 5P				
		< MOTOR >				
M291	A-4608-362-A	MOTOR (L) ASSY (LOADING)				
		< SWITCH >				
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)				
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)				
**********						
*	A-4369-711-A	MAIN BOARD, COMPLETE (CND)				
		**********				
*	A-4369-714-A	MAIN BOARD, COMPLETE (AEP)				
		**********				
*	A-4369-716-A	MAIN BOARD, COMPLETE (SP)				
		**********				
*	A-4369-721-A	MAIN BOARD, COMPLETE (G, IT)				
		**********				
		< CAPACITOR >				
C004	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C101	1-124-925-11	ELECT	2.2uF	20%	100V (AEP, G, IT)	
C102	1-163-117-00	CERAMIC CHIP	100PF	5%	50V (AEP, G, IT)	
C103	1-163-113-00	CERAMIC CHIP	68PF	5%	50V (AEP, G, IT)	
C104	1-124-927-11	ELECT	4.7uF	20%	100V (AEP, (AEP, G, IT)	
C105	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V (AEP, G, IT)	
C106	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V (AEP, G, IT)	
C107	1-164-337-11	CERAMIC CHIP	2.2uF		16V (AEP, G, IT)	
C108	1-124-443-00	ELECT	100uF	20%	10V (AEP, G, IT)	
C116	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C117	1-124-916-11	ELECT	22uF	20%	63V	

Ref. No.	Part No.	Description				Remark
C118	1-124-916-11	ELECT	22uF	20%	63V	
C119	1-124-916-11	ELECT	22uF	20%	63V	
C120	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C121	1-124-907-11	ELECT	10uF	20%	50V	
C122	1-124-925-11	ELECT	2.2uF	20%	100V	
C123	1-124-443-00	ELECT	100uF	20%	10V	
C124	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C125	1-216-295-00	METAL CHIP	0	5%	1/10W	
C126	1-124-907-11	ELECT	10uF	20%	50V	
C127	1-124-907-11	ELECT	10uF	20%	50V	
C128	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	
C129	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	
C130	1-124-927-11	ELECT	4.7uF	20%	100V	
C131	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C132	1-124-927-11	ELECT	4.7uF	20%	100V	
C133	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C134	1-124-927-11	ELECT	4.7uF	20%	100V	
C137	1-124-927-11	ELECT	4.7uF	20%	100V	
C141	1-164-222-11	CERAMIC CHIP	0.22uF		25V	
C142	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C143	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C144	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V	
C145	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C146	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V	
C147	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V	
C148	1-164-222-11	CERAMIC CHIP	0.22uF		25V	
C151	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C152	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	
C153	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C154	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C155	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V	
C156	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C157	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C158	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C160	1-124-907-11	ELECT	10uF	20%	50V	
C161	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V	
C162	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C163	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C164	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C165	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C166	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C167	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C171	1-124-907-11	ELECT	10uF	20%	50V	
C172	1-124-927-11	ELECT	4.7uF	20%	100V	
C174	1-124-916-11	ELECT	22uF	20%	63V	
C190	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C191	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C195	1-124-927-11	ELECT	4.7uF	20%	100V	
C198	1-124-925-11	ELECT	2.2uF	20%	100V	

Ref. No.	Part No.	Description				Remark
C201	1-124-925-11	ELECT	2.2uF	20%	100V	(AEP, G, IT)
C202	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	(AEP, G, IT)
C203	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	(AEP, G, IT)
C204	1-124-927-11	ELECT	4.7uF	20%	100V	(AEP, G, IT)
C205	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	(AEP, G, IT)
C206	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	(AEP, G, IT)
C207	1-164-337-11	CERAMIC CHIP	2.2uF		16V	(AEP, G, IT)
C208	1-124-443-00	ELECT	100uF	20%	10V	(AEP, G, IT)
C216	1-124-916-11	ELECT	22uF	20%	63V	
C217	1-124-916-11	ELECT	22uF	20%	63V	
C218	1-124-916-11	ELECT	22uF	20%	63V	
C219	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C220	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C221	1-124-903-11	ELECT	1uF	20%	50V	
C222	1-124-443-00	ELECT	100uF	20%	10V	
C223	1-124-925-11	ELECT	2.2uF	20%	100V	
C224	1-124-443-00	ELECT	100uF	20%	10V	
C225	1-124-907-11	ELECT	10uF	20%	50V	
C226	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C230	1-124-927-11	ELECT	4.7uF	20%	100V	
C231	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C232	1-124-927-11	ELECT	4.7uF	20%	100V	
C233	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C234	1-124-927-11	ELECT	4.7uF	20%	100V	
C237	1-124-927-11	ELECT	4.7uF	20%	100V	
C241	1-164-222-11	CERAMIC CHIP	0.22uF		25V	
C242	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C243	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C244	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V	
C245	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C246	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V	
C247	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V	
C248	1-164-222-11	CERAMIC CHIP	0.22uF		25V	
C251	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C252	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	
C253	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C254	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C255	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V	
C256	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C257	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C258	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C267	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C271	1-124-907-11	ELECT	10uF	20%	50V	
C272	1-124-907-11	ELECT	10uF	20%	50V	

MAIN

Ref.No.	Part No.	Description				Remark
C274	1-124-916-11	ELECT	22uF	20%	63V	
C290	1-163-038-11	CERAMIC CHIP	0.1uF		25V	
C352	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C353	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C354	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C355	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C356	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C357	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C358	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C359	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C364	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C365	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C366	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C777	1-126-927-11	ELECT	2200uF	20%	10V	
		< CONNECTOR >				
CN301	1-573-085-11	CONNECTOR, FPC (NON ZIF) 19P				
CN302	1-695-342-31	PIN, CONNECTOR (PC BOARD) 19P				
CN308	1-564-506-11	PLUG, CONNECTOR 3P				
* CN312	1-564-508-11	PLUG, CONNECTOR 5P				
* CN316	1-564-505-11	PLUG, CONNECTOR 2P				
* CN335	1-564-506-11	PLUG, CONNECTOR 3P				
CN601	1-573-109-11	PIN, CONNECTOR 15P				
CN602	1-573-109-11	PIN, CONNECTOR 15P				
CN801	1-573-085-11	CONNECTOR, FPC (NON ZIF) 19P				
		< DIODE >				
D101	8-719-800-76	DIODE	1SS226			
D163	8-719-016-74	DIODE	1SS352			
D190	8-719-016-74	DIODE	1SS352			
D191	8-719-016-74	DIODE	1SS352			
D201	8-719-800-76	DIODE	1SS226			
		< IC >				
IC110	8-759-636-55	IC	M5218AFP (AEP, G, IT)			
IC120	8-759-516-47	IC	CD4066BCM			
IC121	8-759-516-41	IC	CD4052BCM			
IC130	8-759-058-95	IC	CXA1492AQ			
IC131	8-759-939-73	IC	BA3308			
IC132	8-759-636-55	IC	M5218AFP			
IC133	8-759-051-64	IC	TC9215F-TP1			
IC134	8-759-636-55	IC	M5218AFP			
IC190	8-759-636-55	IC	M5218AFP			
IC191	8-759-516-43	IC	CD4053BCM			
		< JACK >				
J100	1-565-258-11	JACK, PIN 4P (PHONO/AUX/VIDEO)				
		< JUMPER RESISTOR >				
JW6	1-216-295-00	METAL CHIP	0	5%	1/10W	(CND, SP)
JW7	1-216-295-00	METAL CHIP	0	5%	1/10W	(CND, SP)
JW10	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW110	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< COIL >				
L102	1-410-478-11	INDUCTOR	47uH			
		< TRANSISTOR >				
Q120	8-729-805-43	TRANSISTOR	2SC3396			
Q121	8-729-805-67	TRANSISTOR	2SA1342			
Q122	8-729-805-67	TRANSISTOR	2SA1342			
Q123	8-729-805-67	TRANSISTOR	2SA1342			
Q124	8-729-805-67	TRANSISTOR	2SA1342			
Q125	8-729-805-43	TRANSISTOR	2SC3396			
Q126	8-729-602-21	TRANSISTOR	2SC4154-F			
Q226	8-729-602-21	TRANSISTOR	2SC4154-F			
		< RESISTOR >				
R101	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP, G, IT)
R102	1-216-073-00	METAL CHIP	10K	5%	1/10W	(CND, SP)
R102	1-216-089-00	METAL CHIP	47K	5%	1/10W	(AEP, G, IT)
R103	1-216-115-00	METAL CHIP	560K	5%	1/10W	(AEP, G, IT)
R104	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP, G, IT)
R105	1-216-089-00	METAL CHIP	47K	5%	1/10W	(AEP, G, IT)
R106	1-216-115-00	METAL CHIP	560K	5%	1/10W	(AEP, G, IT)
R107	1-216-041-00	METAL CHIP	470	5%	1/10W	(AEP, G, IT)
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W	(AEP, G, IT)
R109	1-216-033-00	METAL CHIP	220	5%	1/10W	(AEP, G, IT)
R110	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R120	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R122	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R128	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R130	1-216-084-00	METAL CHIP	30K	5%	1/10W	
R132	1-216-084-00	METAL CHIP	30K	5%	1/10W	
R134	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R135	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R137	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R138	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R139	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R140	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R141	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R142	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R143	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R144	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R145	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R146	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R147	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R148	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R149	1-216-049-00	METAL CHIP	1K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R150	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R151	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R153	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R154	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R155	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R156	1-216-043-00	METAL CHIP	560	5%	1/10W	
R157	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R158	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R159	1-216-043-00	METAL CHIP	560	5%	1/10W	
R160	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R162	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R163	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R164	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R165	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R166	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R167	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R168	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R169	1-216-041-00	METAL CHIP	470	5%	1/10W	
R172	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R173	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R174	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R175	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R176	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R190	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R191	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R195	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R196	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R198	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R199	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R201	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP, G, IT)
R202	1-216-073-00	METAL CHIP	10K	5%	1/10W	(CND, SP)
R202	1-216-089-00	METAL CHIP	47K	5%	1/10W	(AEP, G, IT)
R203	1-216-115-00	METAL CHIP	560K	5%	1/10W	(AEP, G, IT)
R204	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP, G, IT)
R205	1-216-089-00	METAL CHIP	47K	5%	1/10W	(AEP, G, IT)
R206	1-216-115-00	METAL CHIP	560K	5%	1/10W	(AEP, G, IT)
R207	1-216-041-00	METAL CHIP	470	5%	1/10W	(AEP, G, IT)
R208	1-216-073-00	METAL CHIP	10K	5%	1/10W	(AEP, G, IT)
R209	1-216-033-00	METAL CHIP	220	5%	1/10W	(AEP, G, IT)
R210	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R211	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R212	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R214	1-216-033-00	METAL CHIP	220	5%	1/10W	
R215	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R216	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R217	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R218	1-216-049-00	METAL CHIP	1K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R219	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R220	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R228	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R230	1-216-084-00	METAL CHIP	30K	5%	1/10W	
R232	1-216-084-00	METAL CHIP	30K	5%	1/10W	
R233	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R234	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R235	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R236	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R237	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R238	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R241	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R242	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R243	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R244	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R245	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R246	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R247	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R248	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R269	1-216-041-00	METAL CHIP	470	5%	1/10W	
R273	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R274	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R275	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R276	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R290	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R296	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R373	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R374	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R501	1-216-033-00	METAL CHIP	220	5%	1/10W	(AEP, G, IT)
R501	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(CND, SP)
R551	1-216-033-00	METAL CHIP	220	5%	1/10W	(AEP, G, IT)
R551	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(CND, SP)
⚠R717	1-249-474-11	CARBON	1	5%	1/2W	F

< TERMINAL >

TB701	1-537-238-21	TERMINAL BOARD (ANTENNA)				

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*	A-4365-626-A	MIC BOARD, COMPLETE (CND, AEP, SP)				
		**********				
*	A-4369-723-A	MIC BOARD, COMPLETE (G, IT)				
		**********				

< CAPACITOR >

C401	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C402	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C403	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C404	1-126-163-11	ELECT	4.7uF	20%	50V
C405	1-126-163-11	ELECT	4.7uF	20%	50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

MIC PANEL

Ref.No.	Part No.	Description				Remark
C406	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C407	1-126-163-11	ELECT	4.7uF	20%	50V	
C408	1-124-589-11	ELECT	47uF	20%	16V	
C409	1-124-589-11	ELECT	47uF	20%	16V	
C410	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C411	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C420	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C421	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
		< CONNECTOR >				
* CN909	1-564-521-11	PLUG, CONNECTOR 6P				
		< IC >				
IC401	8-759-636-55	IC M5218AFP				
		< JACK >				
J401	1-750-032-11	JACK (DIA. 3.5)(MIC MIX)				
		< RESISTOR >				
R402	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R403	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R404	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R405	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R407	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R408	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R409	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R410	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R411	1-216-033-00	METAL CHIP	220	5%	1/10W	
R412	1-216-033-00	METAL CHIP	220	5%	1/10W	
R413	1-216-033-00	METAL CHIP	220	5%	1/10W	
R415	1-216-037-00	METAL CHIP	330	5%	1/10W	
		< VARIABLE RESISTOR >				
RV401	1-223-563-11	RES, VAR, CARBON 10K (MIC LEVEL)				

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Ref.No.	Part No.	Description	Remark
*	A-4369-710-A	PANEL BOARD, COMPLETE (CND)	
		**********	
*	A-4369-713-A	PANEL BOARD, COMPLETE (AEP)	
		**********	
*	A-4369-715-A	PANEL BOARD, COMPLETE (SP)	
		**********	
*	A-4369-724-A	PANEL BOARD, COMPLETE (IT)	
		**********	
*	A-4369-725-A	PANEL BOARD, COMPLETE (G)	
		**********	
*	4-921-941-01	CUSHION (FL)	
*	4-944-202-01	HOLDER (FL)	

< CAPACITOR >

C300	1-104-905-11	CAP, DOUBLE LAYERS	0.22F		5.5V
C301	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C302	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C303	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C304	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C305	1-126-177-11	ELECT	100uF	20%	10V
C308	1-126-157-11	ELECT	10uF	20%	16V
C309	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C311	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C312	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C350	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C360	1-126-177-11	ELECT	100uF	20%	10V
C361	1-126-177-11	ELECT	100uF	20%	10V
C362	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C363	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C370	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C371	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C372	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C373	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C374	1-124-910-11	ELECT	47uF	20%	50V
C381	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C382	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C390	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C391	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C392	1-164-346-11	CERAMIC CHIP	1uF		16V
C393	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C398	1-163-125-00	CERAMIC CHIP	220PF	5%	50V

< CONNECTOR >

CN01	1-561-651-21	SOCKET, CONNECTOR 7P
CN310	1-695-342-31	PIN, CONNECTOR (PC BOARD) 19P
CN311	1-573-085-11	CONNECTOR, FPC (NON ZIF) 19P
CN331	1-564-505-11	PLUG, CONNECTOR 2P

PANEL

Ref.No.	Part No.	Description	Remark
		< DIODE >	
D301	8-719-016-74	DIODE 1SS352	
D302	8-719-016-74	DIODE 1SS352	
D303	8-719-016-74	DIODE 1SS352	
D305	8-719-016-74	DIODE 1SS352	
D311	8-719-016-74	DIODE 1SS352	
D312	8-719-016-74	DIODE 1SS352	
D336	8-719-032-83	DIODE SEL5220S-TP15 (TUNING)	
D337	8-719-032-83	DIODE SEL5220S-TP15 (PRESET)	
D360	8-719-105-91	DIODE RD5.6M-B2	
D361	8-719-105-91	DIODE RD5.6M-B2	
D390	8-719-016-74	DIODE 1SS352	
D391	8-719-016-74	DIODE 1SS352	
D398	8-719-021-31	DIODE UZM5.1B	
		< FLUORESCENT INDICATOR >	
FL301	1-519-730-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC301	8-759-255-14	IC uPD78012BGC-607-AB8	
IC302	8-759-504-12	IC X24C01S	
IC303	8-749-923-80	IC GP1U90XB	
IC304	8-759-634-43	IC M51953BFP	
IC305	8-759-991-11	IC XR1091DCP	
IC306	8-759-516-41	IC CD4052BCM	
IC307	8-759-512-44	IC SN755703FT	
IC308	8-759-512-44	IC SN755703FT	
IC311	8-759-243-19	IC TC7SU04F	
		< JUMPER RESISTOR >	
JW100	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW105	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW106	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW107	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW108	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW111	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< TRANSISTOR >	
Q301	8-729-810-28	TRANSISTOR 2SC4398	
Q390	8-729-602-21	TRANSISTOR 2SC4154-F	
		< RESISTOR >	
R300	1-216-025-00	METAL CHIP 100 5% 1/10W	
R301	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R302	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R303	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R304	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R305	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R306	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R307	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R308	1-216-001-00	METAL CHIP 10 5% 1/10W	
R309	1-216-033-00	METAL CHIP 220 5% 1/10W	
R310	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R311	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R312	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R313	1-216-041-00	METAL CHIP 470 5% 1/10W	(SP)
R313	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	(AEP)
R313	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(CND)
R313	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	(IT)
R313	1-216-072-00	METAL CHIP 9.1K 5% 1/10W	(G)
R323	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R324	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R325	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R326	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R329	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R330	1-216-041-00	METAL CHIP 470 5% 1/10W	
R331	1-216-045-00	METAL CHIP 680 5% 1/10W	
R332	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R333	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R334	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R336	1-216-041-00	METAL CHIP 470 5% 1/10W	
R337	1-216-045-00	METAL CHIP 680 5% 1/10W	
R338	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R339	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R340	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R341	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R348	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R350	1-216-041-00	METAL CHIP 470 5% 1/10W	
R351	1-216-045-00	METAL CHIP 680 5% 1/10W	
R352	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R353	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R354	1-216-041-00	METAL CHIP 470 5% 1/10W	
R355	1-216-045-00	METAL CHIP 680 5% 1/10W	
R360	1-216-017-00	METAL CHIP 47 5% 1/10W	
R361	1-216-017-00	METAL CHIP 47 5% 1/10W	
R362	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R363	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R364	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R365	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R366	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R371	1-216-025-00	METAL CHIP 100 5% 1/10W	
R372	1-216-025-00	METAL CHIP 100 5% 1/10W	
R381	1-216-037-00	METAL CHIP 330 5% 1/10W	
R382	1-216-037-00	METAL CHIP 330 5% 1/10W	
R383	1-216-037-00	METAL CHIP 330 5% 1/10W	
R384	1-216-037-00	METAL CHIP 330 5% 1/10W	
R385	1-216-037-00	METAL CHIP 330 5% 1/10W	
R387	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R388	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

PANEL POWER

Ref.No.	Part No.	Description				Remark
R389	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R394	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R395	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R397	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R398	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R399	1-216-025-00	METAL CHIP	100	5%	1/10W	
R999	1-216-025-00	METAL CHIP	100	5%	1/10W	
		< SWITCH >				
S330	1-554-303-21	SWITCH, TACTILE (TUNING MODE)				
S331	1-554-303-21	SWITCH, TACTILE (-)				
S332	1-554-303-21	SWITCH, TACTILE (BAND)				
S333	1-554-303-21	SWITCH, TACTILE (+)				
S334	1-554-303-21	SWITCH, TACTILE (EQ PRESET)				
S338	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)				
S339	1-554-303-21	SWITCH, TACTILE (▷, ▯▯)				
S340	1-554-303-21	SWITCH, TACTILE (□)				
S341	1-554-303-21	SWITCH, TACTILE (◀◀)				
S342	1-554-303-21	SWITCH, TACTILE (▶▶)				
S343	1-554-303-21	SWITCH, TACTILE (TIMER1)				
S344	1-554-303-21	SWITCH, TACTILE (TIMER REC)				
S345	1-554-303-21	SWITCH, TACTILE (P.MODE)				
S346	1-554-303-21	SWITCH, TACTILE (▮◀◀)				
S347	1-554-303-21	SWITCH, TACTILE (▶▶▮)				
S348	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)				
S349	1-554-303-21	SWITCH, TACTILE (TIMER2)				
S350	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)				
S351	1-554-303-21	SWITCH, TACTILE (KARAOKE PON)				
S354	1-554-303-21	SWITCH, TACTILE (DIRECT)				
S356	1-554-303-21	SWITCH, TACTILE (⏏)				
		< VIBRATOR >				
X301	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)				
X302	1-579-600-11	VIBRATOR, CERAMIC (8.38MHz)				
**********						
*	A-4365-612-A	POWER BOARD, COMPLETE (CND, SP)				
		**********				
*	A-4369-717-A	POWER BOARD, COMPLETE (AEP, G, IT)				
		**********				
		< CAPACITOR >				
C601	1-124-927-11	ELECT	4.7uF	20%	100V	
C602	1-162-289-31	CERAMIC	390PF	10%	50V	
C603	1-124-916-11	ELECT	22uF	20%	63V	
C604	1-162-290-31	CERAMIC	470PF	10%	50V	
C606	1-124-910-11	ELECT	47uF	20%	50V	
C607	1-124-122-11	ELECT	100uF	20%	50V	

Ref.No.	Part No.	Description				Remark
C608	1-124-122-11	ELECT	100uF	20%	50V	
C609	1-124-916-11	ELECT	22uF	20%	63V	
C610	1-136-163-00	FILM	0.068uF	5%	50V	
C612	1-124-907-11	ELECT	10uF	20%	50V	
C613	1-164-159-11	CERAMIC	0.1uF		50V	
C616	1-124-916-11	ELECT	22uF	20%	63V	
C618	1-162-193-31	CERAMIC	3.3PF	10%	50V	
C619	1-136-161-00	FILM	0.047uF	5%	50V	
C620	1-136-163-00	FILM	0.068uF	5%	50V	
C651	1-124-927-11	ELECT	4.7uF	20%	100V	
C652	1-162-289-31	CERAMIC	390PF	10%	50V	
C653	1-124-916-11	ELECT	22uF	20%	63V	
C654	1-162-290-31	CERAMIC	470PF	10%	50V	
C656	1-124-910-11	ELECT	47uF	20%	50V	
C660	1-136-163-00	FILM	0.068uF	5%	50V	
C666	1-124-916-11	ELECT	22uF	20%	63V	
C668	1-162-193-31	CERAMIC	3.3PF	10%	50V	
C670	1-136-163-00	FILM	0.068uF	5%	50V	
C690	1-124-916-11	ELECT	22uF	20%	63V	
C696	1-164-159-11	CERAMIC	0.1uF		50V	
C702	1-126-176-11	ELECT	220uF	20%	10V	
C703	1-124-927-11	ELECT	4.7uF	20%	100V	
C704	1-124-443-00	ELECT	100uF	20%	10V	
C705	1-126-176-11	ELECT	220uF	20%	10V	
C750	1-124-473-11	ELECT	1000uF	20%	10V	
C914	1-124-907-11	ELECT	10uF	20%	50V	
C929	1-124-910-11	ELECT	47uF	20%	50V	
C931	1-124-910-11	ELECT	47uF	20%	50V	
C971	1-124-477-11	ELECT	47uF	20%	25V	(G, IT)
C971	1-124-907-11	ELECT	10uF	20%	50V	(CND, AEP, SP)
C976	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
CN309	1-564-506-11	PLUG, CONNECTOR 3P				
* CN313	1-564-506-11	PLUG, CONNECTOR 3P				
CN601	1-573-095-11	SOCKET, CONNECTOR 15P				
CN602	1-573-095-11	SOCKET, CONNECTOR 15P				
* CN603	1-573-094-11	SOCKET, CONNECTOR 13P				
* CN604	1-573-094-11	SOCKET, CONNECTOR 13P				
* CN605	1-565-291-11	SOCKET, CONNECTOR 13P				
* CN703	1-564-337-00	PIN, CONNECTOR 3P				
CN704	1-564-505-11	PLUG, CONNECTOR 2P (G, IT)				
CN705	1-564-505-11	PLUG, CONNECTOR 2P				
		< DIODE >				
D701	8-719-987-63	DIODE 1N4148M				
D702	8-719-987-63	DIODE 1N4148M				
D703	8-719-987-63	DIODE 1N4148M				
D704	8-719-987-63	DIODE 1N4148M				
D905	8-719-987-63	DIODE 1N4148M				

Ref. No.	Part No.	Description	Remark
D906	8-719-987-63	DIODE 1N4148M	
D924	8-719-002-67	DIODE UZL-33H	
		< IC >	
IC601	8-749-920-13	IC STK-4132MK2	
IC701	8-759-111-68	IC UPC1237HA	
IC901	8-749-921-12	IC GP1F32T	
		< COIL >	
L601	1-420-872-00	COIL, AIR CORE 1.9uH	
L651	1-420-872-00	COIL, AIR CORE 1.9uH	
		< TRANSISTOR >	
Q601	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q602	8-729-900-80	TRANSISTOR DTC114ES	
Q651	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q701	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q702	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q703	8-729-900-63	TRANSISTOR DTA124ES	
Q704	8-729-900-80	TRANSISTOR DTC114ES	
Q920	8-729-209-15	TRANSISTOR 2SD2012	
		< RESISTOR >	
R171	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R271	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R601	1-249-417-11	CARBON 1K 5% 1/4W	F
R602	1-249-438-11	CARBON 56K 5% 1/4W	
R603	1-249-415-11	CARBON 680 5% 1/4W	F
R604	1-249-438-11	CARBON 56K 5% 1/4W	
R605	1-247-756-11	CARBON 2.2K 5% 1/2W	
R606	1-247-756-11	CARBON 2.2K 5% 1/2W	
⚠R607	1-212-881-11	FUSIBLE 100 5% 1/4W	F
⚠R608	1-212-881-11	FUSIBLE 100 5% 1/4W	F
R610	1-247-752-11	CARBON 1K 5% 1/2W	
R611	1-247-752-11	CARBON 1K 5% 1/2W	
R612	1-247-727-11	CARBON 10 5% 1/2W	
R614	1-249-417-11	CARBON 1K 5% 1/4W	F
R630	1-247-727-11	CARBON 10 5% 1/2W	
⚠R631	1-216-361-00	METAL OXIDE 0.22 5% 2W	F
R651	1-249-417-11	CARBON 1K 5% 1/4W	F
R652	1-249-438-11	CARBON 56K 5% 1/4W	
R653	1-249-415-11	CARBON 680 5% 1/4W	F
R654	1-249-438-11	CARBON 56K 5% 1/4W	
R655	1-247-756-11	CARBON 2.2K 5% 1/2W	
R656	1-247-756-11	CARBON 2.2K 5% 1/2W	
R662	1-247-727-11	CARBON 10 5% 1/2W	
R680	1-247-727-11	CARBON 10 5% 1/2W	
⚠R681	1-216-361-00	METAL OXIDE 0.22 5% 2W	F
R690	1-249-417-11	CARBON 1K 5% 1/4W	F
R691	1-249-417-11	CARBON 1K 5% 1/4W	F
R692	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R693	1-247-891-00	CARBON 330K 5% 1/4W	(G, IT)
R693	1-249-441-11	CARBON 100K 5% 1/4W	(CND, AEP, SP)
⚠R695	1-212-950-00	FUSIBLE 4.7 5% 1/2W	F
⚠R696	1-212-950-00	FUSIBLE 4.7 5% 1/2W	F
⚠R697	1-212-950-00	FUSIBLE 4.7 5% 1/2W	F
R701	1-249-417-11	CARBON 1K 5% 1/4W	F
R702	1-249-431-11	CARBON 15K 5% 1/4W	
R703	1-249-417-11	CARBON 1K 5% 1/4W	F
R704	1-249-431-11	CARBON 15K 5% 1/4W	
R705	1-249-441-11	CARBON 100K 5% 1/4W	
R706	1-249-441-11	CARBON 100K 5% 1/4W	
R707	1-247-887-00	CARBON 220K 5% 1/4W	
R708	1-247-887-00	CARBON 220K 5% 1/4W	
R709	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R710	1-249-441-11	CARBON 100K 5% 1/4W	
R711	1-249-429-11	CARBON 10K 5% 1/4W	
R712	1-249-441-11	CARBON 100K 5% 1/4W	
R715	1-249-437-11	CARBON 47K 5% 1/4W	
R716	1-249-430-11	CARBON 12K 5% 1/4W	
R717	1-249-417-11	CARBON 1K 5% 1/4W	F
R718	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R912	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R921	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R937	1-247-807-31	CARBON 100 5% 1/4W	
R938	1-249-393-11	CARBON 10 5% 1/4W	F
R939	1-247-807-31	CARBON 100 5% 1/4W	
		**********	
*	A-4365-614-A	POWER SUPPLY BOARD, COMPLETE(CND, AEP, SP)	
		**********	
*	A-4369-719-A	POWER SUPPLY BOARD, COMPLETE(G, IT)	
		**********	
	1-533-293-11	FUSE HOLDER	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
		< CAPACITOR >	
C900	1-106-367-00	MYLAR 0.01uF 5% 200V	
C901	1-126-256-11	ELECT 4700uF 20% 35V	
C902	1-126-256-11	ELECT 4700uF 20% 35V	
C903	1-106-367-00	MYLAR 0.01uF 5% 200V	
C904	1-124-887-00	ELECT 3300uF 20% 16V	
C905	1-124-887-00	ELECT 3300uF 20% 16V	
C906	1-106-367-00	MYLAR 0.01uF 5% 200V	
C907	1-124-261-00	ELECT 10uF 20% 50V	
C909	1-106-367-00	MYLAR 0.01uF 5% 200V	
C910	1-124-261-00	ELECT 10uF 20% 50V	
C911	1-124-257-00	ELECT 2.2uF 20% 50V	

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POWER SUPPLY

Ref. No.	Part No.	Description				Remark
C912	1-124-473-11	ELECT	1000uF	20%	10V	
C913	1-124-473-11	ELECT	1000uF	20%	10V	
C915	1-124-478-11	ELECT	100uF	20%	25V	
C917	1-124-261-00	ELECT	10uF	20%	50V	
C918	1-124-589-11	ELECT	47uF	20%	16V	
C919	1-126-160-11	ELECT	1uF	20%	50V	
C920	1-124-584-00	ELECT	100uF	20%	10V	
C921	1-126-160-11	ELECT	1uF	20%	50V	
C922	1-124-478-11	ELECT	100uF	20%	25V	
C923	1-124-478-11	ELECT	100uF	20%	25V	
C924	1-124-261-00	ELECT	10uF	20%	50V	
C925	1-124-465-00	ELECT	0.47uF	20%	50V	
C926	1-124-572-11	ELECT	100uF	20%	63V	
C927	1-124-261-00	ELECT	10uF	20%	50V	
C928	1-124-261-00	ELECT	10uF	20%	50V	
C930	1-124-477-11	ELECT	47uF	20%	25V	
C935	1-136-165-00	FILM	0.1uF	5%	50V	
C936	1-136-165-00	FILM	0.1uF	5%	50V	
C937	1-164-159-11	CERAMIC	0.1uF		50V	
C970	1-124-261-00	ELECT	10uF	20%	50V	
C972	1-124-261-00	ELECT	10uF	20%	50V	
C973	1-124-261-00	ELECT	10uF	20%	50V	
C974	1-124-589-11	ELECT	47uF	20%	16V	
C975	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN317	1-564-505-11	PLUG, CONNECTOR 2P				
* CN334	1-564-506-11	PLUG, CONNECTOR 3P				
* CN901	1-573-087-11	PIN, CONNECTOR 13P				
* CN902	1-573-087-11	PIN, CONNECTOR 13P				
CN903	1-564-511-11	PLUG, CONNECTOR 8P				
CN905	1-564-505-11	PLUG, CONNECTOR 2P				
* CN908	1-564-509-11	PLUG, CONNECTOR 6P				
* CN910	1-564-508-11	PLUG, CONNECTOR 5P				
		< DIODE >				
D705	8-719-987-63	DIODE	1N4148M			
D706	8-719-987-63	DIODE	1N4148M			
D900	8-719-312-09	DIODE	RBA-402			
D901	8-719-200-82	DIODE	11ES2			
D902	8-719-200-82	DIODE	11ES2			
D903	8-719-200-82	DIODE	11ES2			
D904	8-719-200-82	DIODE	11ES2			
D916	8-719-000-60	DIODE	UZL-6M2			
D922	8-719-200-82	DIODE	11ES2			
D923	8-719-200-82	DIODE	11ES2			
D925	8-719-933-33	DIODE	HZS6A1L			
D926	8-719-987-63	DIODE	1N4148M			
D927	8-719-987-63	DIODE	1N4148M			

Ref. No.	Part No.	Description				Remark
		< FUSE >				
⚠F903	1-532-286-00	FUSE, TIME-LAG 2.5A (AEP, G, IT, SP)				
⚠F903	1-532-744-11	FUSE, GLASS TUBE 2.5A (CND)				
⚠F904	1-532-286-00	FUSE, TIME-LAG 2.5A (AEP, G, IT, SP)				
⚠F904	1-532-744-11	FUSE, GLASS TUBE 2.5A (CND)				
⚠F905	1-532-777-21	FUSE, MICRO (SECONDARY) 125V 1.25A (CND)				
⚠F906	1-532-777-21	FUSE, MICRO (SECONDARY) 125V 1.25A (CND)				
		< IC >				
IC902	8-759-602-66	IC	M5230L-A			
IC903	8-759-821-93	IC	LA5601			
IC904	8-759-231-61	IC	TA7820S			
IC905	8-759-820-09	IC	LA5667			
IC906	8-759-634-50	IC	M5218AL			
		< IC LINK >				
⚠ICP905	1-532-840-21	LINK, IC 1.25A (AEP, G, IT, SP)				
⚠ICP906	1-532-840-21	LINK, IC 1.25A (AEP, G, IT, SP)				
		< JACK >				
J602	1-565-319-71	JACK, PIN 2P (LINE OUT)				
		< MOTOR >				
M901	1-698-316-11	MOTOR, DC FAN				
		< TRANSISTOR >				
Q903	8-729-141-83	TRANSISTOR	2SB1094-LK			
Q904	8-729-209-15	TRANSISTOR	2SD2012			
Q905	8-729-900-36	TRANSISTOR	DTC124ES			
Q906	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q916	8-729-111-29	TRANSISTOR	2SD1616A-K			
Q921	8-729-140-04	TRANSISTOR	2SB1116A-L			
Q931	8-729-900-89	TRANSISTOR	DTC144ES			
Q932	8-729-900-36	TRANSISTOR	DTC124ES			
Q933	8-729-620-05	TRANSISTOR	2SC2603-EF			
		< RESISTOR >				
R400	1-249-429-11	CARBON	10K	5%	1/4W	
R688	1-249-413-11	CARBON	470	5%	1/4W	F
R689	1-249-413-11	CARBON	470	5%	1/4W	F
R714	1-249-413-11	CARBON	470	5%	1/4W	F
⚠R719	1-215-889-00	METAL OXIDE	330	5%	2W	F
R903	1-249-409-11	CARBON	220	5%	1/4W	F
R904	1-249-409-11	CARBON	220	5%	1/4W	F
R905	1-247-903-00	CARBON	1M	5%	1/4W	
R906	1-249-414-11	CARBON	560	5%	1/4W	F
R907	1-249-414-11	CARBON	560	5%	1/4W	F
R908	1-247-852-11	CARBON	7.5K	5%	1/4W	
R909	1-247-852-11	CARBON	7.5K	5%	1/4W	

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Ref.No.	Part No.	Description				Remark
R910	1-249-429-11	CARBON	10K	5%	1/4W	
R911	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R913	1-249-413-11	CARBON	470	5%	1/4W	F
R916	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R920	1-249-434-11	CARBON	27K	5%	1/4W	
R922	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R923	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R925	1-249-417-11	CARBON	1K	5%	1/4W	F
R926	1-249-417-11	CARBON	1K	5%	1/4W	F
R927	1-249-417-11	CARBON	1K	5%	1/4W	F
R929	1-247-887-00	CARBON	220K	5%	1/4W	
R930	1-249-437-11	CARBON	47K	5%	1/4W	
R931	1-249-435-11	CARBON	33K	5%	1/4W	
R932	1-249-417-11	CARBON	1K	5%	1/4W	F
R933	1-249-417-11	CARBON	1K	5%	1/4W	F
R934	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R935	1-247-887-00	CARBON	220K	5%	1/4W	
R936	1-249-441-11	CARBON	100K	5%	1/4W	
R998	1-249-409-11	CARBON	220	5%	1/4W	
		< RELAY >				
RY701	1-515-920-11	RELAY (24V)				
		< TERMINAL >				
TB601	1-537-238-11	TERMINAL BOARD (SPEAKER)				
**********						
*	1-650-684-11	SENSOR BOARD				
		**********				
		< CAPACITOR >				
C701	1-136-165-00	FILM	0.1uF	5%	50V	
		< IC >				
IC702	8-759-947-34	IC LM35DZ				
**********						
*	A-4303-461-A	TCB BOARD, COMPLETE (SP)				
		**********				
*	A-4303-462-A	TCB BOARD, COMPLETE (CND)				
		**********				
		< CAPACITOR >				
C1	1-126-934-11	ELECT	220uF	20%	16V	
C2	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C3	1-163-009-11	CERAMIC CHIP	1000PF	10%	50V	
C5	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C6	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V	

Ref.No.	Part No.	Description				Remark
C7	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C12	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	(SP)
C13	1-163-033-11	CERAMIC CHIP	0.022uF		50V	(SP)
C14	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V	(SP)
C21	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C22	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C23	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C24	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C25	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C26	1-164-346-11	CERAMIC CHIP	1uF		16V	
C27	1-124-257-00	ELECT	2.2uF	20%	50V	
C28	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C29	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C31	1-124-257-00	ELECT	2.2uF	20%	50V	
C32	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C34	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C51	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C52	1-126-162-11	ELECT	3.3uF	20%	50V	
C53	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C54	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C55	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C57	1-164-346-11	CERAMIC CHIP	1uF		16V	
C58	1-164-346-11	CERAMIC CHIP	1uF		16V	
C59	1-164-346-11	CERAMIC CHIP	1uF		16V	
C60	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C61	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	(SP)
C61	1-163-023-00	CERAMIC CHIP	0.015uF		50V	(CND)
C62	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	(SP)
C62	1-163-023-00	CERAMIC CHIP	0.015uF		50V	(CND)
C63	1-126-301-11	ELECT	1uF	20%	50V	
C64	1-126-301-11	ELECT	1uF	20%	50V	
C65	1-126-301-11	ELECT	1uF	20%	50V	
C66	1-126-301-11	ELECT	1uF	20%	50V	
C70	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C71	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C72	1-126-934-11	ELECT	220uF	20%	16V	
C73	1-124-257-00	ELECT	2.2uF	20%	50V	
C74	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C75	1-126-157-11	ELECT	10uF	20%	16V	
C76	1-126-933-11	ELECT	100uF	20%	16V	
C77	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C78	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C79	1-126-157-11	ELECT	10uF	20%	16V	
C80	1-126-925-11	ELECT	470uF	20%	10V	
C81	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C82	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C86	1-163-016-00	CERAMIC CHIP	3900PF	10%	50V	
C87	1-163-016-00	CERAMIC CHIP	3900PF	10%	50V	

TCB

Ref. No.	Part No.	Description	Remark
		< FILTER >	
CF1	1-567-389-11	FILTER, CERAMIC	
CF51	1-567-389-11	FILTER, CERAMIC	
		< TERMINAL >	
* CN3	1-537-613-11	TERMINAL (8P)	
		< VARIABLE CAPACITOR >	
CV1	1-141-227-00	CAP, TRIMMER (SP)	
CV2	1-141-227-00	CAP, TRIMMER (SP)	
		< DIODE >	
D1	8-719-976-30	DIODE KV1560N (SP)	
D21	8-719-422-46	DIODE MA8056	
D51	8-719-016-74	DIODE 1SS352	
		< FRONT END >	
FE1	1-465-673-11	FRONT END (2 BAND)	
FE2	1-239-260-11	ESCAPSULATED COMPONENT (CND)	
FE2	1-239-262-11	ESCAPSULATED COMPONENT (SP)	
		< IC >	
IC21	8-759-821-43	IC LC7218M	
IC51	8-759-823-68	IC LA1851NM	
		< TRANSFORMER >	
IFT51	1-406-821-11	COIL (DISCRIMINATOR)	
IFT52	1-404-713-11	TRANSFORMER, IF	
		< JUMPER RESISTOR >	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	(SP)
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	(CND)
JW5	1-216-295-00	METAL CHIP 0 5% 1/10W	(CND)
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L51	1-408-798-00	CHIP INDUCTOR 1MMH	
		< FILTER >	
LPF51	1-239-597-11	FILTER, LOW PASS	
LPF52	1-239-597-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-804-72	TRANSISTOR 2SC2814-F4	
Q3	8-729-810-16	TRANSISTOR 2SA1678	
Q4	8-729-602-36	TRANSISTOR 2SA1602-F (SP)	
Q5	8-729-602-36	TRANSISTOR 2SA1602-F (SP)	
Q6	8-729-810-28	TRANSISTOR 2SC4398 (SP)	
Q7	8-729-810-28	TRANSISTOR 2SC4398 (SP)	
Q21	8-729-602-21	TRANSISTOR 2SC4154-F	
Q22	8-729-232-69	TRANSISTOR 2SK208GR3	
Q23	8-729-232-59	TRANSISTOR 2SC4666B	
Q51	8-729-602-21	TRANSISTOR 2SC4154-F	
Q52	8-729-602-21	TRANSISTOR 2SC4154-F	
Q53	8-729-810-28	TRANSISTOR 2SC4398	
		< RESISTOR >	
R1	1-216-037-00	METAL CHIP 330 5% 1/10W	
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
R3	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
R7	1-216-017-00	METAL CHIP 47 5% 1/10W	
R8	1-216-073-00	METAL CHIP 10K 5% 1/10W	(SP)
R9	1-216-089-11	METAL CHIP 47K 5% 1/10W	
R10	1-216-097-11	METAL CHIP 100K 5% 1/10W	
R16	1-216-073-00	METAL CHIP 10K 5% 1/10W	(SP)
R17	1-216-121-00	METAL CHIP 1M 5% 1/10W	(SP)
R18	1-216-073-00	METAL CHIP 10K 5% 1/10W	(SP)
R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R22	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-025-00	METAL CHIP 100 5% 1/10W	
R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R26	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R27	1-216-073-00	METAL CHIP 10K 5% 1/10W	(SP)
R28	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R29	1-216-025-00	METAL CHIP 100 5% 1/10W	
R30	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R31	1-216-043-00	METAL CHIP 560 5% 1/10W	
R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-035-00	METAL CHIP 270 5% 1/10W	
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R37	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R38	1-216-025-00	METAL CHIP 100 5% 1/10W	
R51	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R52	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R53	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R54	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R55	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R58	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R59	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R60	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R61	1-216-115-00	METAL CHIP 560K 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R62	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R63	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R64	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R65	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R66	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R67	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R68	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R69	1-216-025-00	METAL CHIP	100	5%	1/10W	
R70	1-216-025-00	METAL CHIP	100	5%	1/10W	
R71	1-216-089-11	METAL CHIP	47K	5%	1/10W	
R72	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R73	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R74	1-216-013-00	METAL CHIP	33	5%	1/10W	
		< VARIABLE RESISTOR >				
RV51	1-238-601-11	RES, ADJ, CARBON	22K			
RV52	1-238-601-11	RES, ADJ, CARBON	22K			
RV53	1-238-598-11	RES, ADJ, CARBON	2.2K			
		< COIL >				
T1	1-402-424-11	COIL (ANT, SW3)(SP)				
T2	1-406-346-11	COIL (OSC, SW3)(SP)				
		< CONNECTOR >				
TP51	1-564-505-11	PLUG, CONNECTOR 2P				
		< VIBRATOR >				
X21	1-579-585-11	VIBRATOR, CRYSTAL (7.2MHz)				
X51	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)				
*	A-4303-459-A	TCB BOARD, COMPLETE (AEP)				
		**********				
*	A-4303-460-A	TCB BOARD, COMPLETE (G, IT)				
		**********				
		< CAPACITOR >				
C1	1-126-934-11	ELECT	220uF	20%	16V	
C2	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C3	1-163-009-11	CERAMIC CHIP	1000PF	10%	50V	
C5	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(AEP)
C6	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(AEP)
C6	1-216-295-00	METAL CHIP	0	5%	1/10W	(G, IT)
C8	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C9	1-163-012-00	CERAMIC CHIP	1800PF	10%	50V	(AEP)
C10	1-163-011-11	CERAMIC CHIP	1500PF	10%	50V	(AEP)
C11	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V	(AEP)
C11	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V	(G, IT)
C12	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	

Ref. No.	Part No.	Description				Remark
C13	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V	(AEP)
C21	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C22	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C23	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C24	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C25	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C26	1-164-346-11	CERAMIC CHIP	1uF		16V	
C27	1-124-257-00	ELECT	2.2uF	20%	50V	
C29	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C31	1-124-257-00	ELECT	2.2uF	20%	50V	
C32	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C34	1-164-005-11	CERAMIC CHIP	0.47uF		25V	(AEP)
C35	1-163-033-00	CERAMIC CHIP	0.022uF		50V	(AEP)
C36	1-163-033-00	CERAMIC CHIP	0.022uF		50V	(AEP)
C51	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C52	1-126-162-11	ELECT	3.3uF	20%	50V	
C53	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C54	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C55	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	(AEP)
C55	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	(G, IT)
C56	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	(G, IT)
C57	1-164-346-11	CERAMIC CHIP	1uF		16V	
C58	1-164-346-11	CERAMIC CHIP	1uF		16V	
C59	1-164-346-11	CERAMIC CHIP	1uF		16V	
C60	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C61	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
C62	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
C63	1-164-346-11	CERAMIC CHIP	1uF		16V	
C64	1-164-346-11	CERAMIC CHIP	1uF		16V	
C65	1-164-346-11	CERAMIC CHIP	1uF		16V	
C66	1-164-346-11	CERAMIC CHIP	1uF		16V	
C69	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C71	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C72	1-126-934-11	ELECT	220uF	20%	16V	
C73	1-124-257-00	ELECT	2.2uF	20%	50V	
C74	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C75	1-126-157-11	ELECT	10uF	20%	16V	
C76	1-126-933-11	ELECT	100uF	20%	16V	
C79	1-126-157-11	ELECT	10uF	20%	16V	
C80	1-126-925-11	ELECT	470uF	20%	10V	
C81	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C82	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C83	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C86	1-163-016-00	CERAMIC CHIP	3900PF	10%	50V	
C87	1-163-016-00	CERAMIC CHIP	3900PF	10%	50V	
		< FILTER >				
CF1	1-567-389-11	FILTER, CERAMIC				
CF2	1-567-389-11	FILTER, CERAMIC (G, IT)				

TCB

Ref.No.	Part No.	Description	Remark
CF51	1-567-389-11	FILTER, CERAMIC	
		< TERMINAL >	
* CN3	1-537-613-11	TERMINAL (8P)	
		< DIODE >	
D21	8-719-422-46	DIODE MA8056	
D51	8-719-016-74	DIODE 1SS352	
		< FRONT END >	
FE1	1-465-673-11	FRONT END (2 BAND) (AEP)	
FE1	1-465-007-11	FRONT END (4 GANG) (G, IT)	
FE2	1-239-261-12	ESCAPSULATED COMPONENT (AEP)	
FE2	1-239-260-11	ESCAPSULATED COMPONENT (G, IT)	
FE3	1-236-463-11	ESCAPSULATED COMPONENT (AEP)	
		< FILTER >	
FL51	1-239-029-11	ESCAPSULATED COMPONENT (G, IT)	
		< IC >	
IC21	8-759-821-43	IC LC7218M	
IC51	8-759-823-68	IC LA1851NM	
		< TRANSFORMER >	
IFT51	1-406-821-11	COIL (DISCRIMINATOR)	
IFT52	1-404-713-11	TRANSFORMER, IF	
		< JUMPER RESISTOR >	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	(AEP)
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	(G, IT)
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	(G, IT)
JW5	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W	(G, IT)
JW7	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW8	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW9	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L1	1-408-793-21	CHIP INDUCTOR 220uH (AEP)	
L51	1-408-798-00	CHIP INDUCTOR 1MMH	
		< FILTER >	
LPF51	1-239-597-11	FILTER, LOW PASS	
LPF52	1-239-597-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-804-72	TRANSISTOR 2SC2814-F4	
Q2	8-729-804-72	TRANSISTOR 2SC2814-F4	(G, IT)
Q3	8-729-810-16	TRANSISTOR 2SA1678	
Q4	8-729-602-36	TRANSISTOR 2SA1602-F	(AEP)
Q5	8-729-810-28	TRANSISTOR 2SC4398	(AEP)
Q6	8-729-602-36	TRANSISTOR 2SA1602-F	(AEP)
Q7	8-729-810-28	TRANSISTOR 2SC4398	(AEP)
Q21	8-729-602-21	TRANSISTOR 2SC4154-F	
Q22	8-729-232-69	TRANSISTOR 2SK208GR3	
Q23	8-729-232-59	TRANSISTOR 2SC4666B	
Q24	8-729-232-69	TRANSISTOR 2SK208GR3	(AEP)
Q25	8-729-232-59	TRANSISTOR 2SC4666B	(AEP)
Q51	8-729-602-21	TRANSISTOR 2SC4154-F	
Q52	8-729-602-21	TRANSISTOR 2SC4154-F	
Q53	8-729-810-28	TRANSISTOR 2SC4398	
		< RESISTOR >	
R1	1-216-037-00	METAL CHIP 330 5% 1/10W	
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
R3	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
R5	1-216-109-00	METAL CHIP 330K 5% 1/10W	(G, IT)
R6	1-216-037-00	METAL CHIP 330 5% 1/10W	(G, IT)
R7	1-216-017-00	METAL CHIP 47 5% 1/10W	
R8	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(AEP)
R9	1-216-089-11	METAL CHIP 47K 5% 1/10W	(AEP)
R10	1-216-097-11	METAL CHIP 100K 5% 1/10W	(AEP)
R11	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(AEP)
R12	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(AEP)
R13	1-216-089-11	METAL CHIP 47K 5% 1/10W	
R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R15	1-216-121-00	METAL CHIP 1M 5% 1/10W	(AEP)
R15	1-216-295-00	METAL CHIP 0 5% 1/10W	(G, IT)
R16	1-216-089-11	METAL CHIP 47K 5% 1/10W	(AEP)
R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R22	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-025-00	METAL CHIP 100 5% 1/10W	
R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R26	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R27	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AEP)
R28	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R29	1-216-025-00	METAL CHIP 100 5% 1/10W	
R30	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R31	1-216-043-00	METAL CHIP 560 5% 1/10W	
R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-035-00	METAL CHIP 270 5% 1/10W	
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R37	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R38	1-216-025-00	METAL CHIP 100 5% 1/10W	

Ref.No.	Part No.	Description				Remark
R39	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(AEP)
R40	1-216-043-00	METAL CHIP	560	5%	1/10W	(AEP)
R41	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP)
R42	1-216-035-00	METAL CHIP	270	5%	1/10W	(AEP)
R43	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP)
R44	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(AEP)
R45	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(AEP)
R46	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(AEP)
R51	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R52	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R53	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R54	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R55	1-216-075-00	METAL CHIP	12K	5%	1/10W	(AEP)
R56	1-216-075-00	METAL CHIP	12K	5%	1/10W	(G, IT)
R57	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R58	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R59	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R60	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R61	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R62	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R63	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R64	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R65	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R66	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R67	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R68	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R69	1-216-025-00	METAL CHIP	100	5%	1/10W	
R70	1-216-025-00	METAL CHIP	100	5%	1/10W	
R71	1-216-089-11	METAL CHIP	47K	5%	1/10W	
R72	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R73	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R74	1-216-013-00	METAL CHIP	33	5%	1/10W	
R75	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV51	1-238-601-11	RES, ADJ, CARBON	22K			
RV52	1-238-601-11	RES, ADJ, CARBON	22K			
RV53	1-238-598-11	RES, ADJ, CARBON	2.2K			
		< CONNECTOR >				
TP51	1-564-505-11	PLUG, CONNECTOR	2P			
		< VIBRATOR >				
X21	1-579-585-11	VIBRATOR, CRYSTAL (7.2MHz)				
X51	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)				

****

Ref.No.	Part No.	Description	Remark
*	1-650-225-12	TRANSFORMER BOARD	
		**********	
		< CONNECTOR >	
CN10	1-526-930-11	INLET, AC (~ AC IN) (CND, SP)	
CN10	1-526-931-11	INLET, AC (~ AC IN) (AEP, G, IT)	
⚠*CN11	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P (AEP, G, IT, SP)	
⚠CN12	1-540-058-11	OUTLET, AC (POLAR) (AC OUTLET) (CND)	
CN900	1-564-511-11	PLUG, CONNECTOR 8P	
		< FUSE >	
⚠F901	1-532-078-00	FUSE, TIME-LAG 1.0A (AEP, G, IT, SP)	
⚠F901	1-532-743-11	FUSE, TIME-LAG 2A (CND)	
		< RESISTOR >	
⚠R928	1-259-882-11	CARBON 3.3M 5% 1/2W	(CND)
		< TRANSFORMER >	
⚠T900	1-426-838-11	TRANSFORMER, POWER (CND)	
⚠T900	1-426-839-11	TRANSFORMER, POWER (AEP, G, IT, SP)	

****

*	1-650-228-11	VOL BOARD	
		*********	
		< CAPACITOR >	
C173	1-124-261-00	ELECT 10uF 20%	50V
C273	1-124-261-00	ELECT 10uF 20%	50V
C313	1-124-261-00	ELECT 10uF 20%	50V
C314	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
CN311	1-573-712-11	CONNECTOR, BOARD TO BOARD 8P	
* CN314	1-564-506-11	PLUG, CONNECTOR 3P	
* CN315	1-564-506-11	PLUG, CONNECTOR 3P	
CNP310	1-569-132-11	PIN, CONNECTOR 7P	
		< IC >	
IC310	8-759-820-62	IC LB1639	
		< TRANSISTOR >	
Q302	8-729-900-63	TRANSISTOR DTA124ES	
		< RESISTOR >	
R316	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R318	1-249-409-11	CARBON 220 5% 1/4W	F
R370	1-249-417-11	CARBON 1K 5% 1/4W	F

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

VOL

Ref.No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV361	1-223-561-11	RES, VAR, CARBON 10K/100K/100K (VOLUME)	
**********			
		MISCELLANEOUS	
		**********	
26	1-765-075-11	WIRE (FLAT TYPE) (19 CORE)	
27	1-590-906-11	WIRE (FLAT TYPE) (19 CORE)	
28	1-690-422-11	WIRE, FLAT TYPE (19 CORE) (AEP)	
70	1-590-530-11	WIRE, FLAT TYPE	
⚠105	8-848-281-11	OPTICAL PICK-UP BLOCK (KSS-390A)	
108	1-647-341-11	FLEXIBLE BOARD	
⚠CNJ100	1-526-794-11	OUTLET, AC (AEP, G, IT)	
⚠F901	1-532-078-00	FUSE, TIME-LAG 1.0A (AEP, G, IT, SP)	
⚠F901	1-532-743-11	FUSE, GLASS TUBE 2A (CND)	
⚠F903	1-532-286-00	FUSE, TIME-LAG 2.5A (AEP, G, IT, SP)	
⚠F903	1-532-744-11	FUSE, GLASS TUBE 2.5A (CND)	
⚠F904	1-532-286-00	FUSE, TIME-LAG 2.5A (AEP, G, IT, SP)	
⚠F904	1-532-744-11	FUSE, GLASS TUBE 2.5A (CND)	
M901	1-698-316-11	MOTOR, DC FAN	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M291	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
SW101	1-572-085-11	SWITCH, LEAF (LIMIT)	
⚠T900	1-426-838-11	TRANSFORMER, POWER (CND)	
⚠T900	1-426-839-11	TRANSFORMER, POWER (AEP, G, IT, SP)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
*	4-963-769-01	CUSHION (L)	
*	4-963-770-01	CUSHION (R)	
*	4-964-435-01	INDIVIDUAL CARTON (AEP, G, IT)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#3	7-685-651-79	SCREW +BVTP 3X20 TYPE2	
#4	7-682-547-09	SCREW +BVTT 3X6 (S)	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#7	7-621-775-10	SCREW +B 2.6X4	
#8	7-624-105-04	STOP RING 2.3, TYPE -E	
#9	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
#10	7-621-255-15	SCREW +P 2X3	

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HCD-MD1

SONY
SERVICE MANUAL

Canadian Model
AEP Model
Singapore Model

SUPPLEMENT-1

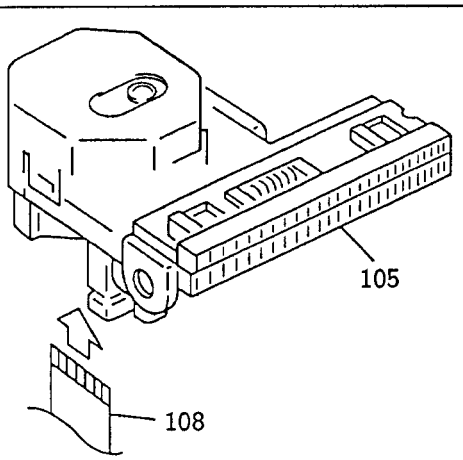
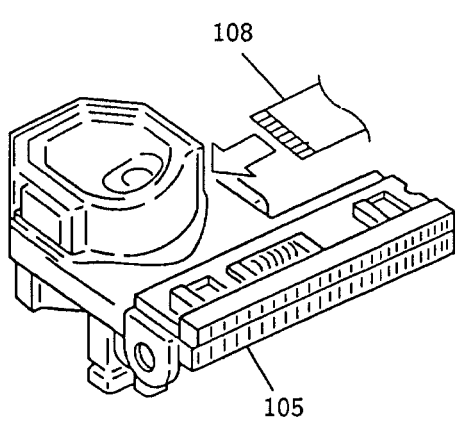
File this supplement with the service manual.

Subject : • Change of the optical pick-up (Change of the base unit)
• CORRECTION

(ECN-CD401365)

• The optical pick-up of CD section is changed from KSS-390A to KSS-240A for this unit. The base unit of CD section is also changed from BU-5BD16 to BU-5BD16A.
As each base unit has no interchangeabillity, judge which base unit is used refering to the following "How to distinct between KSS-390A and KSS-240A."

How to distinct between KSS-390A and KSS-240A.

Optical pick-up KSS-390A (for BU-5BD16)	Optical pick-up KSS-240A (for BU-5BD16A)
	

Refer the following chart when you place an order the parts.

• EXPLODED VIEWS

NOTE :
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

For optical pick-up KSS-390A (for BU-5BD16)				For optical pick-up KSS-240A (for BU-5BD16A)			
Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
⚠105	8-848-281-11	DEVICE, OPTICAL KSS-390A		⚠105	8-848-144-11	DEVICE, OPTICAL KSS-240A	
* 107	A-4649-969-A	BD BOARD, COMPLETE		* 107	A-4673-069-A	BD BOARD, COMPLETE	
108	1-647-341-11	PC BOARD, FLEXIBLE		108	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	

• ELECTRICAL PARTS LIST

NOTE :

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- CAPACITORS
  uF : μF

For optical pick-up KSS-390A (for BU-5BD16)					For optical pick-up KSS-240A (for BU-5BD16A)				
Ref.No.	Part No.	Description		Remark	Ref.No.	Part No.	Description		Remark
*	A-4649-969-A	BD BOARD, COMPLETE **********			*	A-4673-069-A	BD BOARD, COMPLETE **********		
C112	1-164-004-11	CERAMIC CHIP 0.1uF	10%	25V	C112	1-164-232-11	CERAMIC CHIP 0.01uF	10%	50V
C119	1-163-017-00	CERAMIC CHIP 4700PF	10%	50V	C119	1-164-695-11	CERAMIC CHIP 0.0022uF	5%	50V
C153	1-163-143-00	CERAMIC CHIP 0.0012uF	5%	50V	C153	1-163-135-00	CERAMIC CHIP 560PF	5%	50V
C154	1-163-143-00	CERAMIC CHIP 0.0012uF	5%	50V	C154	1-164-695-11	CERAMIC CHIP 0.0022uF	5%	50V
R113	1-216-065-00	CERAMIC CHIP 4.7K	5%	1/10W	R113	1-216-071-00	CERAMIC CHIP 8.2K	5%	1/10W

• CORRECTION

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	Ref.No.	Part No.	Description	Part No.	Description
53, 72	28	1-690-422-11	WIRE, FLAT TYPE (19 CORE) (AEP)	1-765-441-11	WIRE, FLAT TYPE (19 CORE)

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